

ANNUAL GROUNDWATER EXTRACTION SYSTEM PERFORMANCE REPORT HELENA, MONTANA

Prepared For:

**CITY OF HELENA
HELENA, MONTANA**



Hydrometrics, Inc.
consulting scientists and engineers

NOVEMBER 2011

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HE\files\027 COHEL\1273\C11 GW Extraction System - November 2011.ppt\HLN\11/3/2011



NOV 04 2011

DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU



November 3, 2011

Mr. Martin Van Oort
Environmental Science Specialist
Solid Waste Regulatory Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Dear Martin,

On behalf of the City of Helena, I am submitting the annual groundwater extraction system performance report for the City of Helena Landfill, plant ID 049 0014. The groundwater extraction system was installed in the spring of 2000 and is located just north of the landfill boundary. This treatment system includes three extraction wells (HL-99-1, HL-99-2, and HL-99-3) to intercept tetrachloroethene (PCE) impacted groundwater migrating downgradient of the landfill. The extracted groundwater is pumped through aeration nozzles into two lined ponds located on Bill Roberts Golf Course. In accordance with regulations, the treated water is sampled monthly to ensure the treatment goals have been met prior to land application on the golf course.

The groundwater extraction system operated May 19, 2011 through October 13, 2011 for a total of 144 days. New flowmeter displays were installed in all three extraction wells prior to startup and calibration of the system in May. Hydrometrics' personnel winterized the extraction system after the system was shut down in mid-October. Several tables showing all the data collected at the groundwater extraction system over the last year and calculation performed with that data are included as Attachment A to this report. A summary of the operational data is shown in Table 1. With a combined average flow of 69.1 gpm from the three extraction wells, a total of 14.3 million gallons of groundwater were extracted and treated this year.

Table 1. Summary of Operational Data

Extraction Well	Days Operated	Average Flowrate (gpm)	Total Volume Removed (gal)
HL-99-1	144.1	12.8	2,691,150
HL-99-2	140.1*	26.8	5,402,819
HL-99-3	144.1	29.5	6,184,150
Total	144	69.1	14,278,119

*This well was shutdown several days for repairs.

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MANAGEMENT BUREAU

Groundwater samples are collected in December 2010 and June 2011 from each of the extraction wells. The field book notes, sampling forms and lab reports for this sampling were included in the December and June data validation reports you have already received. Table 2 includes a summary of the sample results. Only those parameters that were detected in at least one extraction well during the December 2010 or June 2011 sampling events were included. Assuming a conservative treatment level of 0.0005 mg/L for each compound and the total volume pumped for each well, the estimated mass of volatile organic compounds (VOCs) removed from each well was calculated. These values are also shown in Table 2.

Table 2. Extraction Well Sample Results and Mass of VOCs Removed

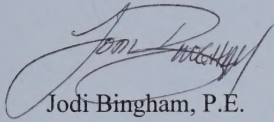
VOC	HL-99-1		HL-99-2		HL-99-3		Total	
	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)
1,1-Dichloroethane	<0.001	0.0000	0.0020	0.0307	0.0020	0.0351	0.0017	0.0658
Chloroform	0.0026	0.0209	0.0017	0.0235	0.0023	0.0410	0.0022	0.0854
Cis-1,2-dichloroethane	0.0017	0.0117	<0.001	0.0000	<0.001	0.0000	0.0012	0.0117
Dichlorodifluoromethane	<0.001	0.0000	0.0017	0.0235	0.0012	0.0152	0.0013	0.0387
Tetrachloroethene (PCE)	0.0031	0.0260	0.0047	0.0849	0.0051	0.1077	0.0043	0.2185
Trichloroethene (TCE)	0.0010	0.0000	0.0011	0.0123	<0.001	0.0000	0.0010	0.0123
Total Mass Removed		0.059		0.175		0.199		0.432

The sample results from the extraction wells indicate that the average PCE concentration being extracted from the system is 0.0043 mg/L. A total of 0.43 kg of VOCs were removed by the groundwater extraction system during the 2011 irrigation season.

During system operation, surface water samples were collected on a monthly basis from the golf course sprinkler system. These water quality samples ensure that treatment goals are met. In addition, a single sample was collected from the east golf course pond during the June sampling event. Cyanide samples were collected from the pond and sprinkler during the August sampling event after the June groundwater sampling indicated elevated levels of cyanide in the extraction wells. The field book notes, sampling forms and lab reports for each of these sampling events has been included as Attachment B to this report. The results from the monthly sampling events indicate that cyanide and all VOCs were below their respective laboratory detection limits prior to land application.

If you have any questions concerning this data or need any additional information to complete your files, please do not hesitate to call me at 443-4150, Ext. 172.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jodi Bingham", with a stylized flourish at the end.

Jodi Bingham, P.E.
Environmental Engineer/Chemist

c: John Rundquist, City of Helena Public Works Director (w/attachments)
Pete Anderson, City of Helena Solid Waste Supervisor (w/attachments)
Mike Wignot, Hydrometrics, Inc. (w/out attachments)

ATTACHMENT A

**DATA ANALYSIS FOR THE
GROUNDWATER EXTRACTION SYSTEM**

HL-99-1

Operational Data:

Date	Time	Hour Meter Reading	Totalizer 2 Reading	Instantaneous Flowmeter Reading	Hours Operated		Volume Extracted		Flowrate	
					Calculated from date	Calculated from hour meter	Calculated from Totalizer 2 Readings	Calculated from Avg. Flow and Hour Meter Readings	Average Flowmeter Reading	Calculated from Totalizer and Hour meter
5/19/2011	11:00	0.0	0	12.6	0	0			12.6	0
5/31/2011	11:54	289.0	223,861	12.66						
	last period to date				288.9	289.0	223,861	219,004	12.63	12.9
6/30/2011	14:40	1011.0	788,420	12.94						
	last period to date				722.8	722.0	564,559	554,496	12.80	13.0
7/21/2011	12:55	1513.9	1,182,620	13.00						
	last period to date				1011.7	1011.0	788,420	772,404	12.73	13.0
8/25/2011	10:30	2328.5	1,814,250	12.72						
	last period to date				837.6	814.6	631,630	628,545	12.86	12.9
9/27/2011	11:05	3077.3	2,395,630	12.88						
	last period to date				2351.5	2328.5	1,814,250	1,786,053	12.78	13.0
10/13/2011	15:15	3458.3	2,691,150	12.94						
	last period to date				792.6	748.8	581,380	575,078	12.80	12.9
					3144.1	3077.3	2,395,630	2,363,366	12.80	13.0
Average/Total for 2011 Operating Season					3532.2	3458.3	2,691,150	2,660,124	12.8	13.0

VOC Sample Data (mg/L):

VOC	Cleanup Level*	12/15/2010	6/15/2011	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.0005	<0.001	<0.001	<0.001	0.0000
Chloroethane	0.0005	<0.001	<0.001	<0.001	0.0000
Chloroform	0.0005	0.0027	0.0024	0.0026	0.0209
Cis-1,2-dichloroethane	0.0005	0.0017	0.0016	0.0017	0.0117
Dichlorodifluoromethane	0.0005	<0.001	<0.001	<0.001	0.0000
Tetrachloroethene	0.0005	0.0032	0.0029	0.0031	0.0260
Trichloroethene	0.0005	<0.001	<0.001	<0.001	0.0000
Trichlorofluoromethane	0.0005	<0.001	<0.001	<0.001	0.0000
Total					0.0586

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Sample Calculation:

mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
 (0.0031 mg/L PCE - 0.0005 mg/L)*2,660,124 gallons water *
 3.785 L/gal * 1/10⁶ kg/mg = 0.0260 kg PCE removed

Operational Data:

				Hours Operated		Volume Extracted		Flowrate		
				Instantaneous			Calculated from		Calculated from	
Date	Time	Hour Meter Reading	Totalizer 2 Reading	Flowmeter Reading	Calculated from date	Calculated from hour meter	Calculated from Totalizer 2 Readings	Flowmeter and Hour Meter Readings	Average Flowmeter Reading	Totalizer and Hour meter
	5/19/2011	11:05	0.0	0	30.7	0	0		30.7	0
	5/31/2011	11:50	218	399,465	30.1	*well shut down for repairs to camlock				
		last period to date			288.8	218.0	399,465	393,185	30.06	30.5
					288.8	218.0	399,465	397,370	30.4	30.5
	6/30/2011	14:35	940.6	995,414	28.1 (est.)	*flowmeter not operating - need to fix impellar				
		last period to date			722.8	722.6	595,949	1,260,070	29.1	13.7
					1011.5	940.6	995,414	1,671,007	29.61	17.6
	7/21/2011	12:50	1420.3	995,819	26.8 (est.)	*flowmeter not operating - need to fix impellar again				
		last period to date			502.2	479.7	405	788,867	27.4	0.0
					1513.7	1420.3	995,819	2,462,303	28.89	11.7
	8/25/2011	11:05	2235.6	995,819	25.1 (est.)	*flowmeter not operating - need to fix impellar again				
		last period to date			838.3	815.3	0	1,268,077	25.9	0.0
					2352.0	2235.6	995,819	3,773,827	28.13	7.4
	9/27/2011	11:10	2981.8	1,898,930	23.4	* flowmeter repaired - down two days for repairs				
		last period to date			792.1	746.2	903,111	1,086,505	24.3	20.2
					3144.1	2981.8	1,898,930	4,893,482	27.35	10.6
	10/13/2011	15:10	3362.8	2,433,950	23.3					
		last period to date			388.0	381.0	535,020	534,581	23.4	23.4
					3532.1	3362.8	2,433,950	5,402,819	26.78	12.1
Average/Total for 2011 Operating Season					3532.1	3362.8	2,433,950	5,402,819	26.8	12.1

VOC Sample Data (mg/L):

VOC	Cleanup Level	12/15/2010	6/15/2011	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.0005	0.0027	0.0013	0.0020	0.0307
Chloroethane	0.0005	<0.001	<0.001	<0.001	0.0000
Chloroform	0.0005	0.0020	0.0013	0.0017	0.0235
Cis-1,2-dichloroethane	0.0005	<0.001	<0.001	<0.001	0.0000
Dichlorodifluoromethane	0.0005	0.0023	0.0010	0.0017	0.0235
Tetrachloroethene	0.0005	0.0059	0.0034	0.0047	0.0849
Trichloroethene	0.0005	0.0012	<0.001	0.0011	0.0123
Trichlorofluoromethane	0.0005	<0.001	<0.001	<0.001	0.0000
Total					0.1748

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Sample Calculation:

mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
 (0.0047 mg/L PCE - 0.0005 mg/L) * 5,402,819 gallons water *
 3.785 L/gal * 1/10⁶ kg/mg = 0.0849 kg PCE removed

Operational Data:

		Hours Operated			Volume Extracted			Flowrate		
Date	Time	Hour Meter Reading	Totalizer 2 Reading	Instantaneous Flowmeter Reading	Calculated from date	Calculated from hour meter	Calculated from Totalizer 2 Readings	Calculated from Flowmeter and Hour Meter Readings	Average Flowmeter Reading	Calculated from Totalizer and Hour meter
5/19/2011	11:10	0.0	0	30.8	0	0			30.8	0
5/31/2011	11:46	288.7	556,821	30.8						
	last period to date				288.6	288.7	556,821	533,085	30.78	32.1
6/30/2011	14:30	1011.3	1,874,790	30.1	288.6	288.7	556,821	533,085	30.78	32.1
	last period to date				722.7	722.6	1,317,969	1,319,323	30.43	30.4
7/21/2011	12:45	1513.5	2,784,570	29.7	1011.3	1011.3	1,874,790	1,853,915	30.55	30.9
	last period to date				502.3	502.2	909,780	900,495	29.89	30.2
8/25/2011	11:10	2329.0	4,228,590	29.4	1513.6	1513.5	2,784,570	2,754,267	30.33	30.7
	last period to date				838.4	815.5	1,444,020	1,444,414	29.52	29.5
9/27/2011	11:15	3077.2	5,537,190	28.3	2352.0	2329.0	4,228,590	4,211,764	30.14	30.3
	last period to date				792.1	748.2	1,308,600	1,295,359	28.86	29.1
10/13/2011	15:05	3458.1	6,184,150	27.72	3144.1	3077.2	5,537,190	5,509,111	29.84	30.0
	last period to date				387.8	380.9	646,960	640,483	28.03	28.3
					3531.9	3458.1	6,184,150	6,128,247	29.54	29.8
Average/Total for 2011 Operating Season					3531.9	3458.1	6,184,150	6,128,247	29.5	29.8

VOC Sample Data (mg/L):

VOC	Cleanup Level	12/15/2010	6/15/2011	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.0005	0.0018	0.0022	0.0020	0.0351
Chloroethane	0.0005	<0.001	<0.001	<0.001	0.0000
Chloroform	0.0005	0.0024	0.0021	0.0023	0.0410
Cis-1,2-dichloroethane	0.0005	<0.001	<0.001	<0.001	0.0000
Dichlorodifluoromethane	0.0005	<0.001	0.0013	0.0012	0.0152
Tetrachloroethene	0.0005	0.0051	0.0051	0.0051	0.1077
Trichloroethene	0.0005	<0.001	<0.001	<0.001	0.0000
Trichlorofluoromethane	0.0005	<0.001	<0.001	<0.001	0.0000
Total					0.1990

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Sample Calculation:

mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
 = (0.0051 mg/L PCE - 0.0005 mg/L) * 6,184,150 gallons water *
 3.785 L/gal * 1/10⁶ kg/mg = 0.1077 kg PCE removed

ATTACHMENT B

**FIELD BOOK NOTES, SAMPLING FORMS AND
LAB REPORTS FOR SURFACE WATER SAMPLES**

Site	Sample Code #	Date	Time	Bottles
Sprinkler	CHHL-1105-100	5/31/11	11:35	3/UF/HCl/VOC 3/UF/Raw/VOC

Weather:

55°, Breezy, Partly Cloudy

GUES

Site	Time	Hr	Flow	Total
HL-99-3	11:46	288.7	30.75	556821
HL-99-2	11:50	218.0	30.06	399465
HL-99- 3 ¹	11:54	289.0	12.66	225861



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ANALYTICAL SUMMARY REPORT

June 09, 2011

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H11050424 Quote ID: H504 - Lewis and Clark County Landfill

Project Name: 1273 City of Helena Landfill

Energy Laboratories Inc Helena MT received the following 1 sample for Hydrometrics Inc on 5/31/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H11050424-001	CHHL-1105-100	05/31/11 11:35	05/31/11	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Wanda Johnson

Login Supervisor

Digitally signed by
Wanda Johnson

Date: 2011.06.10 11:28:34 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill
Lab ID: H11050424-001
Client Sample ID CHHL-1105-100

Report Date: 06/09/11
Collection Date: 05/31/11 11:35
DateReceived: 05/31/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/01/11 17:35 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/01/11 17:35 / abb
Benzene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Bromoform	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Chloroform	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/01/11 17:35 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/01/11 17:35 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/01/11 17:35 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Styrene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Toluene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

Prepared by Helena, MT Branch

Report Date: 06/09/11
Collection Date: 05/31/11 11:35
DateReceived: 05/31/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	06/01/11 17:35 / abb
Surr: 1,2-Dichloroethane-d4	128	%REC		70-130		SW8260B	06/01/11 17:35 / abb
Surr: Dibromofluoromethane	92.0	%REC		70-130		SW8260B	06/01/11 17:35 / abb
Surr: p-Bromofluorobenzene	103	%REC		70-130		SW8260B	06/01/11 17:35 / abb
Surr: Toluene-d8	98.0	%REC		70-130		SW8260B	06/01/11 17:35 / abb

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Project: 1273 City of Helena Landfill

Report Date: 06/09/11

Work Order: H11050424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R71461
Sample ID: LCS060111A	54	Laboratory Control Sample				Run: 1SATURN_110601A				06/01/11 11:15
Acetone		52.8	ug/L	20	106	70	130			
Acrylonitrile		52.0	ug/L	20	104	70	130			
Benzene		4.52	ug/L	1.0	90	70	130			
Bromochloromethane		4.48	ug/L	1.0	90	70	130			
Bromodichloromethane		4.32	ug/L	1.0	86	70	130			
Bromoform		4.80	ug/L	1.0	96	70	130			
Bromomethane		4.64	ug/L	1.0	93	70	130			
Carbon disulfide		4.76	ug/L	1.0	95	70	130			
Carbon tetrachloride		4.12	ug/L	1.0	82	70	130			
Chlorobenzene		5.00	ug/L	1.0	100	70	130			
Chlorodibromomethane		4.52	ug/L	1.0	90	70	130			
Chloroethane		4.60	ug/L	1.0	92	70	130			
Chloroform		4.40	ug/L	1.0	88	70	130			
Chloromethane		4.92	ug/L	1.0	98	70	130			
1,2-Dibromo-3-chloropropane		4.76	ug/L	1.0	95	70	130			
1,2-Dibromoethane		4.44	ug/L	1.0	89	70	130			
Dibromomethane		4.64	ug/L	1.0	93	70	130			
1,2-Dichlorobenzene		5.32	ug/L	1.0	106	70	130			
1,4-Dichlorobenzene		4.80	ug/L	1.0	96	70	130			
trans-1,4-Dichloro-2-butene		4.52	ug/L	1.0	90	70	130			
Dichlorodifluoromethane		6.08	ug/L	1.0	122	70	130			
1,1-Dichloroethane		4.88	ug/L	1.0	98	70	130			
1,2-Dichloroethane		5.00	ug/L	1.0	100	70	130			
1,1-Dichloroethene		4.16	ug/L	1.0	83	70	130			
cis-1,2-Dichloroethene		4.84	ug/L	1.0	97	70	130			
trans-1,2-Dichloroethene		4.40	ug/L	1.0	88	70	130			
1,2-Dichloropropane		5.04	ug/L	1.0	101	70	130			
cis-1,3-Dichloropropene		4.84	ug/L	1.0	97	70	130			
trans-1,3-Dichloropropene		5.16	ug/L	1.0	103	70	130			
Ethylbenzene		4.92	ug/L	1.0	98	70	130			
2-Hexanone		53.6	ug/L	20	107	70	130			
Iodomethane		4.56	ug/L	1.0	91	70	130			
Methyl ethyl ketone		52.0	ug/L	20	104	70	130			
Methyl isobutyl ketone		51.2	ug/L	20	102	70	130			
Methylene chloride		4.84	ug/L	1.0	97	70	130			
Styrene		4.80	ug/L	1.0	96	70	130			
1,1,1,2-Tetrachloroethane		4.96	ug/L	1.0	99	70	130			
1,1,2,2-Tetrachloroethane		4.64	ug/L	1.0	93	70	130			
Tetrachloroethene		4.64	ug/L	1.0	93	70	130			
Toluene		4.16	ug/L	1.0	83	70	130			
1,1,1-Trichloroethane		4.48	ug/L	1.0	90	70	130			
1,1,2-Trichloroethane		5.20	ug/L	1.0	104	70	130			
Trichloroethene		4.40	ug/L	1.0	88	70	130			
Trichlorofluoromethane		4.24	ug/L	1.0	85	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Project: 1273 City of Helena Landfill

Report Date: 06/09/11

Work Order: H11050424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R71461
Sample ID: LCS060111A	54	Laboratory Control Sample		Run: 1SATURN_110601A		06/01/11 11:15				
1,2,3-Trichloropropane		4.36	ug/L	1.0	87	70	130			
Vinyl acetate		6.48	ug/L	1.0	130	70	130			
Vinyl chloride		5.32	ug/L	1.0	106	70	130			
m+p-Xylenes		10.1	ug/L	1.0	101	70	130			
o-Xylene		5.00	ug/L	1.0	100	70	130			
Xylenes, Total		15.1	ug/L	1.0	101	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	112	70	130			
Surr: Dibromofluoromethane				1.0	102	70	130			
Surr: p-Bromofluorobenzene				1.0	103	70	130			
Surr: Toluene-d8				1.0	92	70	130			
Sample ID: MB060111A	54	Method Blank		Run: 1SATURN_110601A		06/01/11 12:31				
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						
1,4-Dichlorobenzene		ND	ug/L	1.0						
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Project: 1273 City of Helena Landfill

Report Date: 06/09/11

Work Order: H11050424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R71461
Sample ID: MB060111A	54	Method Blank		Run: 1SATURN_110601A					06/01/11 12:31	
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	113	70	130			
Surr: Dibromofluoromethane				1.0	104	70	130			
Surr: p-Bromofluorobenzene				1.0	102	70	130			
Surr: Toluene-d8				1.0	94	70	130			
Sample ID: H11050365-001DMS	54	Sample Matrix Spike		Run: 1SATURN_110601A					05/27/11 15:25	
Acetone		122	ug/L	40	122	70	130			
Acrylonitrile		107	ug/L	40	107	70	130			
Benzene		10.6	ug/L	2.0	106	70	130			
Bromochloromethane		10.2	ug/L	2.0	102	70	130			
Bromodichloromethane		10.2	ug/L	2.0	102	70	130			
Bromoform		10.4	ug/L	2.0	104	70	130			
Bromomethane		10.6	ug/L	2.0	106	70	130			
Carbon disulfide		10.0	ug/L	2.0	100	70	130			
Carbon tetrachloride		8.96	ug/L	2.0	90	70	130			
Chlorobenzene		10.8	ug/L	2.0	108	70	130			
Chlorodibromomethane		9.60	ug/L	2.0	96	70	130			
Chloroethane		13.3	ug/L	2.0	133	70	130			S
Chloroform		10.3	ug/L	2.0	103	70	130			
Chloromethane		11.4	ug/L	2.0	114	70	130			
1,2-Dibromo-3-chloropropane		11.1	ug/L	2.0	111	70	130			
1,2-Dibromoethane		8.96	ug/L	2.0	90	70	130			
Dibromomethane		10.6	ug/L	2.0	106	70	130			
1,2-Dichlorobenzene		11.1	ug/L	2.0	111	70	130			
1,4-Dichlorobenzene		10.4	ug/L	2.0	104	70	130			
trans-1,4-Dichloro-2-butene		9.92	ug/L	2.0	99	70	130			

Qualifiers:

RL - Analyte reporting limit.

S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Project: 1273 City of Helena Landfill

Report Date: 06/09/11

Work Order: H11050424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R71461
Sample ID: H11050365-001DMS	54	Sample Matrix Spike		Run: 1SATURN_110601A					05/27/11 15:25	
Dichlorodifluoromethane		13.6	ug/L	2.0	131	70	130			S
1,1-Dichloroethane		10.3	ug/L	2.0	103	70	130			
1,2-Dichloroethane		11.7	ug/L	2.0	117	70	130			
1,1-Dichloroethene		9.28	ug/L	2.0	93	70	130			
cis-1,2-Dichloroethene		28.4	ug/L	2.0	109	70	130			
trans-1,2-Dichloroethene		10.0	ug/L	2.0	100	70	130			
1,2-Dichloropropane		12.0	ug/L	2.0	120	70	130			
cis-1,3-Dichloropropene		10.6	ug/L	2.0	106	70	130			
trans-1,3-Dichloropropene		10.7	ug/L	2.0	107	70	130			
Ethylbenzene		10.5	ug/L	2.0	105	70	130			
2-Hexanone		106	ug/L	40	106	70	130			
Iodomethane		9.68	ug/L	2.0	97	70	130			
Methyl ethyl ketone		128	ug/L	40	128	70	130			
Methyl isobutyl ketone		109	ug/L	40	109	70	130			
Methylene chloride		10.3	ug/L	2.0	103	70	130			
Styrene		10.4	ug/L	2.0	104	70	130			
1,1,1,2-Tetrachloroethane		10.4	ug/L	2.0	104	70	130			
1,1,2,2-Tetrachloroethane		9.92	ug/L	2.0	99	70	130			
Tetrachloroethene		11.0	ug/L	2.0	100	70	130			
Toluene		9.04	ug/L	2.0	90	70	130			
1,1,1-Trichloroethane		10.0	ug/L	2.0	100	70	130			
1,1,2-Trichloroethane		11.6	ug/L	2.0	116	70	130			
Trichloroethene		10.1	ug/L	2.0	97	70	130			
Trichlorofluoromethane		8.56	ug/L	2.0	86	70	130			
1,2,3-Trichloropropane		10.0	ug/L	2.0	100	70	130			
Vinyl acetate		15.5	ug/L	2.0	155	70	130			S
Vinyl chloride		11.4	ug/L	2.0	114	70	130			
m+p-Xylenes		21.8	ug/L	2.0	109	70	130			
o-Xylene		11.4	ug/L	2.0	114	70	130			
Xylenes, Total		33.2	ug/L	2.0	111	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	109	70	130			
Surr: Dibromofluoromethane				2.0	96	70	130			
Surr: p-Bromofluorobenzene				2.0	94	70	130			
Surr: Toluene-d8				2.0	83	70	130			
Sample ID: H11050365-001DMSD	54	Sample Matrix Spike Duplicate		Run: 1SATURN_110601A					05/27/11 15:56	
Acetone		117	ug/L	40	117	70	130	4.7	20	
Acrylonitrile		110	ug/L	40	110	70	130	2.9	20	
Benzene		10.4	ug/L	2.0	104	70	130	1.5	20	
Bromochloromethane		9.52	ug/L	2.0	95	70	130	6.5	20	
Bromodichloromethane		9.76	ug/L	2.0	98	70	130	4.8	20	
Bromoform		10.1	ug/L	2.0	101	70	130	3.1	20	
Bromomethane		10.2	ug/L	2.0	102	70	130	3.9	20	
Carbon disulfide		10.5	ug/L	2.0	105	70	130	4.7	20	

Qualifiers:

RL - Analyte reporting limit.

S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 06/09/11

Project: 1273 City of Helena Landfill

Work Order: H11050424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R71461
Sample ID: H11050365-001DMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_110601A 05/27/11 15:56
Carbon tetrachloride		9.04	ug/L	2.0	90	70	130	0.9	20	
Chlorobenzene		10.4	ug/L	2.0	104	70	130	3.8	20	
Chlorodibromomethane		9.52	ug/L	2.0	95	70	130	0.8	20	
Chloroethane		12.2	ug/L	2.0	122	70	130	8.2	20	
Chloroform		9.68	ug/L	2.0	97	70	130	6.4	20	
Chloromethane		10.4	ug/L	2.0	104	70	130	8.8	20	
1,2-Dibromo-3-chloropropane		10.2	ug/L	2.0	102	70	130	8.2	20	
1,2-Dibromoethane		8.96	ug/L	2.0	90	70	130	0.0	20	
Dibromomethane		9.92	ug/L	2.0	99	70	130	7.0	20	
1,2-Dichlorobenzene		10.6	ug/L	2.0	106	70	130	4.4	20	
1,4-Dichlorobenzene		10.2	ug/L	2.0	102	70	130	2.3	20	
trans-1,4-Dichloro-2-butene		10.4	ug/L	2.0	104	70	130	4.7	20	
Dichlorodifluoromethane		13.0	ug/L	2.0	125	70	130	4.8	20	
1,1-Dichloroethane		10.0	ug/L	2.0	100	70	130	3.1	20	
1,2-Dichloroethane		11.3	ug/L	2.0	113	70	130	3.5	20	
1,1-Dichloroethene		8.96	ug/L	2.0	90	70	130	3.5	20	
cis-1,2-Dichloroethene		28.1	ug/L	2.0	106	70	130	1.1	20	
trans-1,2-Dichloroethene		9.68	ug/L	2.0	97	70	130	3.3	20	
1,2-Dichloropropane		10.9	ug/L	2.0	109	70	130	9.8	20	
cis-1,3-Dichloropropene		10.2	ug/L	2.0	102	70	130	3.8	20	
trans-1,3-Dichloropropene		10.6	ug/L	2.0	106	70	130	1.5	20	
Ethylbenzene		10.3	ug/L	2.0	103	70	130	1.5	20	
2-Hexanone		102	ug/L	40	102	70	130	3.1	20	
Iodomethane		10.0	ug/L	2.0	100	70	130	3.3	20	
Methyl ethyl ketone		120	ug/L	40	120	70	130	6.5	20	
Methyl isobutyl ketone		107	ug/L	40	107	70	130	1.5	20	
Methylene chloride		9.84	ug/L	2.0	98	70	130	4.8	20	
Styrene		9.92	ug/L	2.0	99	70	130	4.7	20	
1,1,1,2-Tetrachloroethane		11.3	ug/L	2.0	113	70	130	8.1	20	
1,1,2,2-Tetrachloroethane		10.3	ug/L	2.0	103	70	130	4.0	20	
Tetrachloroethene		10.6	ug/L	2.0	96	70	130	3.7	20	
Toluene		8.96	ug/L	2.0	90	70	130	0.9	20	
1,1,1-Trichloroethane		9.76	ug/L	2.0	98	70	130	2.4	20	
1,1,2-Trichloroethane		11.0	ug/L	2.0	110	70	130	5.7	20	
Trichloroethene		9.76	ug/L	2.0	93	70	130	3.2	20	
Trichlorofluoromethane		8.40	ug/L	2.0	84	70	130	1.9	20	
1,2,3-Trichloropropane		10.1	ug/L	2.0	101	70	130	0.8	20	
Vinyl acetate		15.2	ug/L	2.0	152	70	130	2.1	20	S
Vinyl chloride		11.4	ug/L	2.0	114	70	130	0.0	20	
m+p-Xylenes		20.5	ug/L	2.0	102	70	130	6.1	20	
o-Xylene		11.0	ug/L	2.0	110	70	130	3.6	20	
Xylenes, Total		31.5	ug/L	2.0	105	70	130	5.2	20	
Surr: 1,2-Dichloroethane-d4				2.0	102	70	130	0.0	20	
Surr: Dibromofluoromethane				2.0	94	70	130	0.0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Project: 1273 City of Helena Landfill

Report Date: 06/09/11

Work Order: H11050424

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R71461
Sample ID: H11050365-001DMSD	54	Sample Matrix Spike Duplicate					Run: 1SATURN_110601A			05/27/11 15:56
Surr: p-Bromofluorobenzene				2.0	98	70	130	0.0		20
Surr: Toluene-d8				2.0	84	70	130	0.0		20

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



Workorder Receipt Checklist



H11050424

Hydrometrics Inc

Login completed by: Esther L. Merritt

Date Received: 5/31/2011

Reviewed by: BL2000\ablackburn

Received by: wj

Reviewed Date: 6/1/2011

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature:	8.2°C From Field		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:

None



3020 Bozeman Avenue • Helena, Montana 59601 • (406) 443-4150

Page 11 of 11

Site	Sample Code#	Date	Time	Bottles
Sparkler	CHHL- 1106-	6/30/11	1400	3 1/2 HL / VOX
	100			
Pond	CHHL- 1106-	6/30/11	1415	
	101			

Weather: Windy, 24°C, Partly cloudy

CWES:

Site	Time	Ha	Flow	Total
HL-94-3	1430	1011.3	30.11	187489
				187479
HL-94-2	1435	940.6	0.0	945819
				945414
HL-94-1	1440	1011.0	12.94	788479
				788420

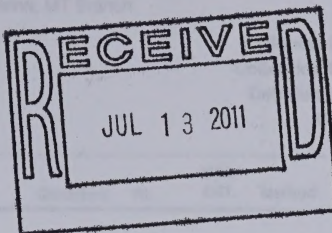
ANALYTICAL SUMMARY REPORT

July 07, 2011

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H11070005

Project Name: 1273 City of Helena



Energy Laboratories Inc Helena MT received the following 2 samples for Hydrometrics Inc on 7/1/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H11070005-001	CHHL-1106-100	06/30/11 14:00	07/01/11	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I
H11070005-002	CHHL-1106-101	06/30/11 14:15	07/01/11	Aqueous	Same As Above

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Wanda Johnson
Login Supervisor

Digitally signed by
Wanda Johnson
Date: 2011.07.08 07:23:24 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H11070005-001
Client Sample ID CHHL-1106-100

Report Date: 07/07/11
Collection Date: 06/30/11 14:00
Date Received: 07/01/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	07/06/11 11:31 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	07/06/11 11:31 / abb
Benzene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Bromoform	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Chloroform	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
2-Hexanone	ND	ug/L		20		SW8260B	07/06/11 11:31 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/06/11 11:31 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/06/11 11:31 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Styrene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Toluene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H11070005-001
Client Sample ID CHHL-1106-100

Report Date: 07/07/11
Collection Date: 06/30/11 14:00
DateReceived: 07/01/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Surr: 1,2-Dichloroethane-d4	108	%REC		70-130		SW8260B	07/06/11 11:31 / abb
Surr: Dibromofluoromethane	103	%REC		70-130		SW8260B	07/06/11 11:31 / abb
Surr: p-Bromofluorobenzene	106	%REC		70-130		SW8260B	07/06/11 11:31 / abb
Surr: Toluene-d8	91.0	%REC		70-130		SW8260B	07/06/11 11:31 / abb
Chloroform	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Dichloromethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3-Pentachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3-Hexachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4-Heptachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4-Octachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5-Nonachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6-Decachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7-Undecachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8-Dodecachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11-Pentachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12-Hexachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13-Heptachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14-Octachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15-Nonachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16-Decachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19-Pentachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20-Hexachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21-Heptachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22-Octachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23-Nonachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24-Decachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27-Pentachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28-Hexachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29-Heptachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30-Octachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31-Nonachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32-Decachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35-Pentachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36-Hexachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37-Heptachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38-Octachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39-Nonachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40-Decachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43-Pentachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44-Hexachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45-Heptachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46-Octachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47-Nonachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48-Decachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51-Pentachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52-Hexachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53-Heptachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54-Octachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55-Nonachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56-Decachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59-Pentachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60-Hexachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61-Heptachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62-Octachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63-Nonachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 11:31 / abb
1,1,2,2,3,3,4,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,							

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H11070005-002
Client Sample ID CHHL-1106-101

Report Date: 07/07/11
Collection Date: 06/30/11 14:15
Date Received: 07/01/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	07/06/11 12:02 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	07/06/11 12:02 / abb
Benzene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Bromochloromethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Bromodichloromethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Bromoform	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Bromomethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Carbon disulfide	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Chlorobenzene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Chlorodibromomethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Chloroethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Chloroform	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Chloromethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,2-Dibromoethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Dibromomethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,2-Dichlorobenzene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,4-Dichlorobenzene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Dichlorodifluoromethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,1-Dichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,2-Dichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,1-Dichloroethene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
cis-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
trans-1,2-Dichloroethene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,2-Dichloropropane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
cis-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
trans-1,3-Dichloropropene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Ethylbenzene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
2-Hexanone	ND	ug/L		20		SW8260B	07/06/11 12:02 / abb
Iodomethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/06/11 12:02 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/06/11 12:02 / abb
Methylene chloride	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Styrene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Tetrachloroethene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Toluene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,1,1-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,1,2-Trichloroethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Trichloroethene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H11070005-002
Client Sample ID CHHL-1106-101

Report Date: 07/07/11
Collection Date: 06/30/11 14:15
Date Received: 07/01/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
1,2,3-Trichloropropane	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Vinyl acetate	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Vinyl chloride	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
m+p-Xylenes	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
o-Xylene	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Xylenes, Total	ND	ug/L		1.0		SW8260B	07/06/11 12:02 / abb
Surr: 1,2-Dichloroethane-d4	131	%REC	S	70-130		SW8260B	07/06/11 12:02 / abb
Surr: Dibromofluoromethane	97.0	%REC		70-130		SW8260B	07/06/11 12:02 / abb
Surr: p-Bromofluorobenzene	110	%REC		70-130		SW8260B	07/06/11 12:02 / abb
Surr: Toluene-d8	93.0	%REC		70-130		SW8260B	07/06/11 12:02 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
S - Spike recovery outside of advisory limits.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/07/11
Work Order: H11070005

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R72436
Sample ID: LCS070611A	45 Laboratory Control Sample					Run: 1SATURN_110707A				07/06/11 09:43
Benzene		5.68	ug/L	1.0	114	70	130			
Bromochloromethane		4.72	ug/L	1.0	94	70	130			
Bromodichloromethane		4.84	ug/L	1.0	97	70	130			
Bromoform		4.64	ug/L	1.0	93	70	130			
Bromomethane		5.28	ug/L	1.0	106	70	130			
Carbon tetrachloride		4.96	ug/L	1.0	99	70	130			
Chlorobenzene		5.36	ug/L	1.0	107	70	130			
Chlorodibromomethane		4.80	ug/L	1.0	96	70	130			
Chloroethane		4.68	ug/L	1.0	94	70	130			
Chloroform		4.60	ug/L	1.0	92	70	130			
Chloromethane		5.20	ug/L	1.0	104	70	130			
1,2-Dibromoethane		4.36	ug/L	1.0	87	70	130			
Dibromomethane		5.08	ug/L	1.0	102	70	130			
1,2-Dichlorobenzene		5.20	ug/L	1.0	104	70	130			
1,4-Dichlorobenzene		4.92	ug/L	1.0	98	70	130			
Dichlorodifluoromethane		6.16	ug/L	1.0	123	70	130			
1,1-Dichloroethane		5.20	ug/L	1.0	104	70	130			
1,2-Dichloroethane		6.48	ug/L	1.0	130	70	130			
1,1-Dichloroethene		5.24	ug/L	1.0	105	70	130			
cis-1,2-Dichloroethene		5.28	ug/L	1.0	106	70	130			
trans-1,2-Dichloroethene		5.00	ug/L	1.0	100	70	130			
1,2-Dichloropropane		5.32	ug/L	1.0	106	70	130			
cis-1,3-Dichloropropene		5.12	ug/L	1.0	102	70	130			
trans-1,3-Dichloropropene		5.24	ug/L	1.0	105	70	130			
Ethylbenzene		5.44	ug/L	1.0	109	70	130			
Methyl ethyl ketone		46.8	ug/L	20	94	70	130			
Methylene chloride		5.24	ug/L	1.0	105	70	130			
Styrene		5.28	ug/L	1.0	106	70	130			
1,1,1,2-Tetrachloroethane		5.44	ug/L	1.0	109	70	130			
1,1,2,2-Tetrachloroethane		4.84	ug/L	1.0	97	70	130			
Tetrachloroethene		5.52	ug/L	1.0	110	70	130			
Toluene		4.60	ug/L	1.0	92	70	130			
1,1,1-Trichloroethane		5.36	ug/L	1.0	107	70	130			
1,1,2-Trichloroethane		5.40	ug/L	1.0	108	70	130			
Trichloroethene		5.28	ug/L	1.0	106	70	130			
Trichlorofluoromethane		4.52	ug/L	1.0	90	70	130			
1,2,3-Trichloropropane		4.80	ug/L	1.0	96	70	130			
Vinyl chloride		5.96	ug/L	1.0	119	70	130			
m+p-Xylenes		11.4	ug/L	1.0	114	70	130			
o-Xylene		5.48	ug/L	1.0	110	70	130			
Xylenes, Total		16.9	ug/L	1.0	113	70	130			
Surr: Dibromofluoromethane				1.0	100	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	128	70	130			
Surr: Toluene-d8				1.0	99	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/07/11
Work Order: H11070005

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R72436
Sample ID: LCS070611A	45	Laboratory Control Sample				Run: 1SATURN_110707A				07/06/11 09:43
Surr: p-Bromofluorobenzene				1.0	103	70	130			
Sample ID: MB070611A	45	Method Blank				Run: 1SATURN_110707A				07/06/11 11:00
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						
1,4-Dichlorobenzene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethane		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



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QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 07/07/11
Work Order: H11070005

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R72436
Sample ID: MB070611A										07/06/11 11:00
45 Method Blank										Run: 1SATURN_110707A
Surr: Dibromofluoromethane				1.0	99	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	104	70	130			
Surr: Toluene-d8				1.0	95	70	130			
Surr: p-Bromofluorobenzene				1.0	107	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



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Workorder Receipt Checklist



H11070005

Hydrometrics Inc

Login completed by: Amanda B. Blackburn

Date Received: 7/1/2011

Reviewed by: BL2000\wjohnson

Received by: TLL

Reviewed Date: 7/6/2011

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature:	2.4°C On Ice		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:

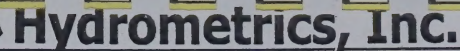
None

hydrometrics, inc.
3020 Bozeman Avenue • Helena, Montana 59601 • (406) 443-4150

Page 10 of 10

HFORM-1-5/99

Return results & electronic copy to: 2.40 OnIce
QA/QC Dept. at address at top of page Box



3020 Bozeman Avenue • Helena, Montana 59601 • (406) 443-4150

[illegible]

HFORM-1-5/99

Return results & electronic copy to:
QA/QC Dept. at address at top of page

Split Samples:

☐ Accepted ☐ Declined

Signature _____

Site	Sample Pore #	Date	Time	Bottles
Sprinkler	CHHL- 1107- 100	7/24/11	1235	3/UF/HCl/VOC

Weather: Slightly cloudy, calm, 75°

GLBS:

Site	Time	Hr	Flow	Totals
HL-99-1	1255	1513.9	13.00	1182690 1182620
HL-99-2	1250	1420.3	8	995819
HL-99-3	1245	1513.5	29.66	2184670 2184570

Tom Swartz

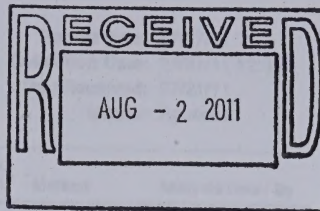
ANALYTICAL SUMMARY REPORT

July 27, 2011

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H11070339

Project Name: 1273 City of Helena Landfill



Energy Laboratories Inc Helena MT received the following 1 sample for Hydrometrics Inc on 7/21/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H11070339-001	CHHL-1107-100	07/21/11 12:35	07/21/11	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Wanda Johnson
Login Supervisor

Digitally signed by
Wanda Johnson

Date: 2011.07.27 15:09:30 -06:00

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill
Lab ID: H11070339-001
Client Sample ID CHHL-1107-100

Report Date: 07/27/11
Collection Date: 07/21/11 12:35
Date Received: 07/21/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	07/25/11 18:46 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	07/25/11 18:46 / abb
Benzene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Bromoform	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Chloroform	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
2-Hexanone	ND	ug/L		20		SW8260B	07/25/11 18:46 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/25/11 18:46 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	07/25/11 18:46 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Styrene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Toluene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill
Lab ID: H11070339-001
Client Sample ID CHHL-1107-100

Report Date: 07/27/11
Collection Date: 07/21/11 12:35
Date Received: 07/21/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	07/25/11 18:46 / abb
Surr: 1,2-Dichloroethane-d4	113	%REC		70-130		SW8260B	07/25/11 18:46 / abb
Surr: Dibromofluoromethane	98.0	%REC		70-130		SW8260B	07/25/11 18:46 / abb
Surr: p-Bromofluorobenzene	104	%REC		70-130		SW8260B	07/25/11 18:46 / abb
Surr: Toluene-d8	100	%REC		70-130		SW8260B	07/25/11 18:46 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
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QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill

Report Date: 07/27/11
Work Order: H11070339

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R72941
Sample ID: CCV072511a										07/25/11 10:08
54 Continuing Calibration Verification Standard										
Acetone		51.2	ug/L	20	102	70	130			
Acrylonitrile		48.8	ug/L	20	98	70	130			
Benzene		5.00	ug/L	1.0	100	70	130			
Bromochloromethane		4.80	ug/L	1.0	96	70	130			
Bromodichloromethane		5.12	ug/L	1.0	102	70	130			
Bromoform		5.00	ug/L	1.0	100	70	130			
Bromomethane		4.76	ug/L	1.0	95	70	130			
Carbon disulfide		5.20	ug/L	1.0	104	70	130			
Carbon tetrachloride		4.76	ug/L	1.0	95	70	130			
Chlorobenzene		5.12	ug/L	1.0	102	70	130			
Chlorodibromomethane		5.20	ug/L	1.0	104	70	130			
Chloroethane		4.96	ug/L	1.0	99	70	130			
Chloroform		4.72	ug/L	1.0	94	80	120			
Chloromethane		5.68	ug/L	1.0	114	70	130			
1,2-Dibromo-3-chloropropane		4.64	ug/L	1.0	93	70	130			
1,2-Dibromoethane		4.72	ug/L	1.0	94	70	130			
Dibromomethane		4.92	ug/L	1.0	98	70	130			
1,2-Dichlorobenzene		4.88	ug/L	1.0	98	70	130			
1,4-Dichlorobenzene		4.92	ug/L	1.0	98	70	130			
trans-1,4-Dichloro-2-butene		5.28	ug/L	1.0	106	70	130			
Dichlorodifluoromethane		5.40	ug/L	1.0	108	70	130			
1,1-Dichloroethane		5.28	ug/L	1.0	106	70	130			
1,2-Dichloroethane		5.48	ug/L	1.0	110	70	130			
1,1-Dichloroethene		4.80	ug/L	1.0	96	80	120			
cis-1,2-Dichloroethene		5.20	ug/L	1.0	104	70	130			
trans-1,2-Dichloroethene		4.60	ug/L	1.0	92	70	130			
1,2-Dichloropropane		5.24	ug/L	1.0	105	80	120			
cis-1,3-Dichloropropene		5.16	ug/L	1.0	103	70	130			
trans-1,3-Dichloropropene		5.28	ug/L	1.0	106	70	130			
Ethylbenzene		5.20	ug/L	1.0	104	80	120			
2-Hexanone		50.4	ug/L	20	101	70	130			
Iodomethane		5.00	ug/L	1.0	100	70	130			
Methyl ethyl ketone		48.8	ug/L	20	98	70	130			
Methyl isobutyl ketone		51.2	ug/L	20	102	70	130			
Methylene chloride		4.84	ug/L	1.0	97	70	130			
Styrene		5.00	ug/L	1.0	100	70	130			
1,1,1,2-Tetrachloroethane		5.16	ug/L	1.0	103	70	130			
1,1,2,2-Tetrachloroethane		5.00	ug/L	1.0	100	70	130			
Tetrachloroethene		5.32	ug/L	1.0	106	70	130			
Toluene		5.04	ug/L	1.0	101	80	120			
1,1,1-Trichloroethane		4.88	ug/L	1.0	98	70	130			
1,1,2-Trichloroethane		5.48	ug/L	1.0	110	70	130			
Trichloroethene		5.16	ug/L	1.0	103	70	130			
Trichlorofluoromethane		5.20	ug/L	1.0	104	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Project: 1273 City of Helena Landfill

Report Date: 07/27/11

Work Order: H11070339

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R72941
Sample ID: CCV072511a	54	Continuing Calibration Verification Standard								07/25/11 10:08
1,2,3-Trichloropropane		4.72	ug/L	1.0	94	70	130			
Vinyl acetate		4.44	ug/L	1.0	89	70	130			
Vinyl chloride		5.60	ug/L	1.0	112	80	120			
m+p-Xylenes		10.2	ug/L	1.0	102	70	130			
o-Xylene		5.20	ug/L	1.0	104	70	130			
Xylenes, Total		15.4	ug/L	1.0	103	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	124	70	130			
Surr: Dibromofluoromethane				1.0	106	70	130			
Surr: p-Bromofluorobenzene				1.0	98	70	130			
Surr: Toluene-d8				1.0	105	70	130			

Method: SW8260B							Batch: R72941	
Sample ID: LCS072511A	54	Laboratory Control Sample			Run: 1SATURN_110726A			07/25/11 10:49
Acetone	47.6	ug/L	20	95	70	130		
Acrylonitrile	50.0	ug/L	20	100	70	130		
Benzene	4.16	ug/L	1.0	83	70	130		
Bromochloromethane	4.24	ug/L	1.0	85	70	130		
Bromodichloromethane	5.04	ug/L	1.0	101	70	130		
Bromoform	4.72	ug/L	1.0	94	70	130		
Bromomethane	5.96	ug/L	1.0	119	70	130		
Carbon disulfide	6.12	ug/L	1.0	122	70	130		
Carbon tetrachloride	4.56	ug/L	1.0	91	70	130		
Chlorobenzene	4.60	ug/L	1.0	92	70	130		
Chlorodibromomethane	4.96	ug/L	1.0	99	70	130		
Chloroethane	6.48	ug/L	1.0	130	70	130		
Chloroform	4.28	ug/L	1.0	86	70	130		
Chloromethane	5.12	ug/L	1.0	102	70	130		
1,2-Dibromo-3-chloropropane	4.40	ug/L	1.0	88	70	130		
1,2-Dibromoethane	4.36	ug/L	1.0	87	70	130		
Dibromomethane	4.88	ug/L	1.0	98	70	130		
1,2-Dichlorobenzene	4.76	ug/L	1.0	95	70	130		
1,4-Dichlorobenzene	4.52	ug/L	1.0	90	70	130		
trans-1,4-Dichloro-2-butene	4.56	ug/L	1.0	91	70	130		
Dichlorodifluoromethane	4.72	ug/L	1.0	94	70	130		
1,1-Dichloroethane	4.64	ug/L	1.0	93	70	130		
1,2-Dichloroethane	5.16	ug/L	1.0	103	70	130		
1,1-Dichloroethene	4.48	ug/L	1.0	90	70	130		
cis-1,2-Dichloroethene	4.68	ug/L	1.0	94	70	130		
trans-1,2-Dichloroethene	4.40	ug/L	1.0	88	70	130		
1,2-Dichloropropane	4.92	ug/L	1.0	98	70	130		
cis-1,3-Dichloropropene	4.72	ug/L	1.0	94	70	130		
trans-1,3-Dichloropropene	4.96	ug/L	1.0	99	70	130		
Ethylbenzene	4.84	ug/L	1.0	97	70	130		
2-Hexanone	50.0	ug/L	20	100	70	130		

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Project: 1273 City of Helena Landfill

Report Date: 07/27/11

Work Order: H11070339

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R72941
Sample ID: LCS072511A	54	Laboratory Control Sample				Run: 1SATURN_110726A				07/25/11 10:49
Iodomethane		4.20	ug/L	1.0	84	70	130			
Methyl ethyl ketone		48.0	ug/L	20	96	70	130			
Methyl isobutyl ketone		49.6	ug/L	20	99	70	130			
Methylene chloride		4.20	ug/L	1.0	84	70	130			
Styrene		4.72	ug/L	1.0	94	70	130			
1,1,1,2-Tetrachloroethane		4.64	ug/L	1.0	93	70	130			
1,1,2,2-Tetrachloroethane		4.92	ug/L	1.0	98	70	130			
Tetrachloroethene		5.08	ug/L	1.0	102	70	130			
Toluene		4.80	ug/L	1.0	96	70	130			
1,1,1-Trichloroethane		4.44	ug/L	1.0	89	70	130			
1,1,2-Trichloroethane		5.12	ug/L	1.0	102	70	130			
Trichloroethene		4.92	ug/L	1.0	98	70	130			
Trichlorofluoromethane		4.56	ug/L	1.0	91	70	130			
1,2,3-Trichloropropane		4.08	ug/L	1.0	82	70	130			
Vinyl acetate		4.04	ug/L	1.0	81	70	130			
Vinyl chloride		5.08	ug/L	1.0	102	70	130			
m+p-Xylenes		9.84	ug/L	1.0	98	70	130			
o-Xylene		4.80	ug/L	1.0	96	70	130			
Xylenes, Total		14.6	ug/L	1.0	98	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	118	70	130			
Surr: Dibromofluoromethane				1.0	91	70	130			
Surr: p-Bromofluorobenzene				1.0	98	70	130			
Surr: Toluene-d8				1.0	104	70	130			
Sample ID: MB072511A	54	Method Blank				Run: 1SATURN_110726A				07/25/11 12:04
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						
1,4-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill

Report Date: 07/27/11
Work Order: H11070339

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R72941
Sample ID: MB072511A	54	Method Blank		Run: 1SATURN_110726A				07/25/11 12:04		
trans-1,4-Dichloro-2-butene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	0.50						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				1.0	115	70	130			
Surr: Dibromodifluoromethane				1.0	91	70	130			
Surr: p-Bromodifluorobenzene				1.0	101	70	130			
Surr: Toluene-d8				1.0	103	70	130			
Sample ID: H11070317-001EMS										07/25/11 19:17
	54	Sample Matrix Spike		Run: 1SATURN_110726A						
Acetone		101	ug/L	40	101	70	130			
Acrylonitrile		94.4	ug/L	40	94	70	130			
Benzene		9.92	ug/L	2.0	99	70	130			
Bromochloromethane		9.04	ug/L	2.0	90	70	130			
Bromodichloromethane		10.1	ug/L	2.0	101	70	130			
Bromoform		9.68	ug/L	2.0	97	70	130			
Bromomethane		8.48	ug/L	2.0	85	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 07/27/11

Project: 1273 City of Helena Landfill

Work Order: H11070339

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R72941	
Sample ID: H11070317-001EMS 54 Sample Matrix Spike									Run: 1SATURN_110726A	
									07/25/11 19:17	
Carbon disulfide		10.2	ug/L	2.0	102	70	130			
Carbon tetrachloride		10.6	ug/L	2.0	106	70	130			
Chlorobenzene		9.76	ug/L	2.0	98	70	130			
Chlorodibromomethane		9.84	ug/L	2.0	98	70	130			
Chloroethane		9.44	ug/L	2.0	94	70	130			
Chloroform		9.12	ug/L	2.0	91	70	130			
Chloromethane		9.76	ug/L	2.0	98	70	130			
1,2-Dibromo-3-chloropropane		9.44	ug/L	2.0	94	70	130			
1,2-Dibromoethane		9.28	ug/L	2.0	93	70	130			
Dibromomethane		10.1	ug/L	2.0	101	70	130			
1,2-Dichlorobenzene		9.44	ug/L	2.0	94	70	130			
1,4-Dichlorobenzene		9.44	ug/L	2.0	94	70	130			
trans-1,4-Dichloro-2-butene		10.2	ug/L	2.0	102	70	130			
Dichlorodifluoromethane		9.68	ug/L	2.0	97	70	130			
1,1-Dichloroethane		10.2	ug/L	2.0	102	70	130			
1,2-Dichloroethane		10.3	ug/L	2.0	103	70	130			
1,1-Dichloroethene		10.2	ug/L	2.0	102	70	130			
cis-1,2-Dichloroethene		9.76	ug/L	2.0	98	70	130			
trans-1,2-Dichloroethene		9.44	ug/L	2.0	94	70	130			
1,2-Dichloropropane		10.7	ug/L	2.0	107	70	130			
cis-1,3-Dichloropropene		10.4	ug/L	2.0	104	70	130			
trans-1,3-Dichloropropene		10.2	ug/L	2.0	102	70	130			
Ethylbenzene		10.2	ug/L	2.0	102	70	130			
2-Hexanone		91.2	ug/L	40	91	70	130			
Iodomethane		9.68	ug/L	2.0	97	70	130			
Methyl ethyl ketone		88.8	ug/L	40	89	70	130			
Methyl isobutyl ketone		97.6	ug/L	40	98	70	130			
Methylene chloride		9.28	ug/L	2.0	93	70	130			
Styrene		9.76	ug/L	2.0	98	70	130			
1,1,1,2-Tetrachloroethane		9.92	ug/L	2.0	99	70	130			
1,1,2,2-Tetrachloroethane		10.4	ug/L	2.0	104	70	130			
Tetrachloroethene		10.2	ug/L	2.0	102	70	130			
Toluene		10.2	ug/L	2.0	102	70	130			
1,1,1-Trichloroethane		9.92	ug/L	2.0	99	70	130			
1,1,2-Trichloroethane		10.9	ug/L	2.0	109	70	130			
Trichloroethene		9.68	ug/L	2.0	97	70	130			
Trichlorofluoromethane		9.60	ug/L	2.0	96	70	130			
1,2,3-Trichloropropane		9.36	ug/L	2.0	94	70	130			
Vinyl acetate		8.72	ug/L	2.0	87	70	130			
Vinyl chloride		10.4	ug/L	2.0	104	70	130			
m+p-Xylenes		20.7	ug/L	2.0	104	70	130			
o-Xylene		10.0	ug/L	2.0	100	70	130			
Xylenes, Total		30.7	ug/L	2.0	102	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	117	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 07/27/11

Project: 1273 City of Helena Landfill

Work Order: H11070339

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R72941
Sample ID: H11070317-001EMS	54	Sample Matrix Spike		Run: 1SATURN_110726A				07/25/11 19:17		
Surr: Dibromofluoromethane				2.0	99	70	130			
Surr: p-Bromofluorobenzene				2.0	102	70	130			
Surr: Toluene-d8				2.0	104	70	130			
Sample ID: H11070317-001EMSD	54	Sample Matrix Spike Duplicate		Run: 1SATURN_110726A				07/25/11 19:48		
Acetone		96.8	ug/L	40	97	70	130	4.0	20	
Acrylonitrile		94.4	ug/L	40	94	70	130	0.0	20	
Benzene		9.28	ug/L	2.0	93	70	130	6.7	20	
Bromochloromethane		8.64	ug/L	2.0	86	70	130	4.5	20	
Bromodichloromethane		10.2	ug/L	2.0	102	70	130	0.8	20	
Bromoform		9.04	ug/L	2.0	90	70	130	6.8	20	
Bromomethane		6.85	ug/L	2.0	68	70	130	21	20	SR
Carbon disulfide		9.44	ug/L	2.0	94	70	130	8.1	20	
Carbon tetrachloride		9.60	ug/L	2.0	96	70	130	10	20	
Chlorobenzene		9.84	ug/L	2.0	98	70	130	0.8	20	
Chlorodibromomethane		9.68	ug/L	2.0	97	70	130	1.6	20	
Chloroethane		8.96	ug/L	2.0	90	70	130	5.2	20	
Chloroform		8.64	ug/L	2.0	86	70	130	5.4	20	
Chloromethane		11.0	ug/L	2.0	110	70	130	12	20	
1,2-Dibromo-3-chloropropane		9.12	ug/L	2.0	91	70	130	3.4	20	
1,2-Dibromoethane		8.88	ug/L	2.0	89	70	130	4.4	20	
Dibromomethane		9.76	ug/L	2.0	98	70	130	3.2	20	
1,2-Dichlorobenzene		9.44	ug/L	2.0	94	70	130	0.0	20	
1,4-Dichlorobenzene		8.96	ug/L	2.0	90	70	130	5.2	20	
trans-1,4-Dichloro-2-butene		8.96	ug/L	2.0	90	70	130	13	20	
Dichlorodifluoromethane		8.96	ug/L	2.0	90	70	130	7.7	20	
1,1-Dichloroethane		9.28	ug/L	2.0	93	70	130	9.1	20	
1,2-Dichloroethane		10.7	ug/L	2.0	107	70	130	3.8	20	
1,1-Dichloroethene		8.96	ug/L	2.0	90	70	130	13	20	
cis-1,2-Dichloroethene		9.12	ug/L	2.0	91	70	130	6.8	20	
trans-1,2-Dichloroethene		8.48	ug/L	2.0	85	70	130	11	20	
1,2-Dichloropropane		10.4	ug/L	2.0	104	70	130	3.0	20	
cis-1,3-Dichloropropene		10.6	ug/L	2.0	106	70	130	1.5	20	
trans-1,3-Dichloropropene		10.2	ug/L	2.0	102	70	130	0.0	20	
Ethylbenzene		10.2	ug/L	2.0	102	70	130	0.0	20	
2-Hexanone		107	ug/L	40	107	70	130	16	20	
Iodomethane		9.28	ug/L	2.0	93	70	130	4.2	20	
Methyl ethyl ketone		88.8	ug/L	40	89	70	130	0.0	20	
Methyl isobutyl ketone		99.2	ug/L	40	99	70	130	1.6	20	
Methylene chloride		9.36	ug/L	2.0	94	70	130	0.9	20	
Styrene		9.60	ug/L	2.0	96	70	130	1.7	20	
1,1,1,2-Tetrachloroethane		9.60	ug/L	2.0	96	70	130	3.3	20	
1,1,2,2-Tetrachloroethane		10.1	ug/L	2.0	101	70	130	3.1	20	
Tetrachloroethene		9.92	ug/L	2.0	99	70	130	2.4	20	

Qualifiers:

RL - Analyte reporting limit.

R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 07/27/11

Project: 1273 City of Helena Landfill

Work Order: H11070339

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R72941
Sample ID: H11070317-001EMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_110726A 07/25/11 19:48
Toluene		10.1	ug/L	2.0	101	70	130	1.6		20
1,1,1-Trichloroethane		8.88	ug/L	2.0	89	70	130	11		20
1,1,2-Trichloroethane		11.3	ug/L	2.0	113	70	130	3.6		20
Trichloroethene		10.0	ug/L	2.0	100	70	130	3.3		20
Trichlorofluoromethane		9.36	ug/L	2.0	94	70	130	2.5		20
1,2,3-Trichloropropane		10.3	ug/L	2.0	103	70	130	9.8		20
Vinyl acetate		8.48	ug/L	2.0	85	70	130	2.8		20
Vinyl chloride		9.52	ug/L	2.0	95	70	130	8.8		20
m+p-Xylenes		20.2	ug/L	2.0	101	70	130	2.7		20
o-Xylene		9.92	ug/L	2.0	99	70	130	0.8		20
Xylenes, Total		30.1	ug/L	2.0	100	70	130	2.1		20
Surr: 1,2-Dichloroethane-d4				2.0	115	70	130	0.0		20
Surr: Dibromofluoromethane				2.0	96	70	130	0.0		20
Surr: p-Bromofluorobenzene				2.0	96	70	130	0.0		20
Surr: Toluene-d8				2.0	107	70	130	0.0		20

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



H11070339

Hydrometrics Inc

Login completed by: Tracy L. Lorash

Date Received: 7/21/2011

Reviewed by: BL2000\ablackburn

Received by: wjj

Reviewed Date: 7/26/2011

 Carrier Hand Del
 name:

Shipping container/cooler in good condition?

 Yes ☒

 No ☐

 Not Present ☐

Custody seals intact on shipping container/cooler?

 Yes ☐

 No ☐

 Not Present ☒

Custody seals intact on sample bottles?

 Yes ☐

 No ☐

 Not Present ☒

Chain of custody present?

 Yes ☒

 No ☐

Chain of custody signed when relinquished and received?

 Yes ☒

 No ☐

Chain of custody agrees with sample labels?

 Yes ☒

 No ☐

Samples in proper container/bottle?

 Yes ☒

 No ☐

Sample containers intact?

 Yes ☒

 No ☐

Sufficient sample volume for indicated test?

 Yes ☒

 No ☐

All samples received within holding time?

 Yes ☒

 No ☐

Container/Temp Blank temperature:

4.9°C On Ice

Water - VOA vials have zero headspace?

 Yes ☐

 No ☒

 No VOA vials submitted ☐

Water - pH acceptable upon receipt?

 Yes ☐

 No ☐

 Not Applicable ☒

Contact and Corrective Action Comments:

One of the VOA vials has a pin size air bubble in it. TI 7/21/11.



CHAIN OF CUSTODY RECORD

3020 Bozeman Avenue • Helena, Montana 59601 • (406) 443-4150

[illegible]

Page 12 of 12

Return results & electronic copy to:

Split Samples:
☐ Accepted ☐ Declined

Summary

Site	Sample Code #	Date	Time	Bottles
Golf Course Sprinkler	CHHL-1108-100	8/25/11	11:30	3/UF/HCl/VOC 1/UF/NaOH/CN

Golf Course East Pond	CHHL-1108-101	8/25/11	11:20	1/UF/NaOH/CN
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Weather:

Sunny, light breeze, 70°

GWES:

Site	Time	Hr	Flow	Totals
HL-99-1	10:30	2328.5	12.72	18143/10 181425x10
HL-99-2	11:05	2235.6	—	—
HL-99-3	11:10	2329.0 2428	29.38	422869x10 422859x10

[Signature]
8/25/11



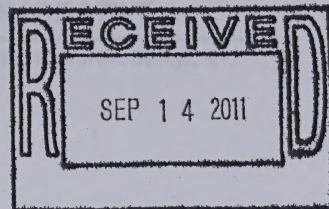
ANALYTICAL SUMMARY REPORT

September 09, 2011

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H11080466 Quote ID: H667 - Landfill Parameters

Project Name: 1273 City of Helena



Energy Laboratories Inc Helena MT received the following 2 samples for Hydrometrics Inc on 8/25/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H11080466-001	CHHL-1108-100 Sprinkler	08/25/11 11:30	08/25/11	Aqueous	Cyanide, Total Manual Distillation Total Cyanide Digestion 8260-Volatile Organic Comp, 40 CFR Part 258 App I
H11080466-002	CHHL-1108-101 Pond	08/25/11 11:20	08/25/11	Aqueous	Cyanide, Total Manual Distillation Total Cyanide Digestion

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Wanda Johnson
Login Supervisor

Digitally signed by
Wanda Johnson
Date: 2011.09.09 14:03:45 -06:00

Report Date: 09/09/11

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

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LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H11080466-001
Client Sample ID CHHL-1108-100 Sprinkler

Report Date: 09/09/11
Collection Date: 08/25/11 11:30
Date Received: 08/25/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
INORGANICS							
Cyanide, Total	ND	mg/L		0.005		Kelada mod	09/01/11 11:29 / eli-b
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	08/29/11 18:56 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	08/29/11 18:56 / abb
Benzene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Bromoform	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Chloroform	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
2-Hexanone	ND	ug/L		20		SW8260B	08/29/11 18:56 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	08/29/11 18:56 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	08/29/11 18:56 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Styrene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Toluene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H11080466-001
Client Sample ID CHHL-1108-100 Sprinkler

Report Date: 09/09/11
Collection Date: 08/25/11 11:30
Date Received: 08/25/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	08/29/11 18:56 / abb
Surr: 1,2-Dichloroethane-d4	116	%REC		70-130		SW8260B	08/29/11 18:56 / abb
Surr: Dibromofluoromethane	102	%REC		70-130		SW8260B	08/29/11 18:56 / abb
Surr: p-Bromofluorobenzene	103	%REC		70-130		SW8260B	08/29/11 18:56 / abb
Surr: Toluene-d8	99.0	%REC		70-130		SW8260B	08/29/11 18:56 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



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Gilllette, WY 866-686-7175 • Rapid City, SD 888-672-1225 • College Station, TX 888-690-2218

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H11080466-002
Client Sample ID CHHL-1108-101 Pond

Report Date: 09/09/11
Collection Date: 08/25/11 11:20
Date Received: 08/25/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
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INORGANICS

Cyanide, Total	ND	mg/L		0.005		Kelada mod	09/01/11 11:32 / eli-b
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Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/09/11
Work Order: H11080466

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: Kelada mod										Analytical Run: SUB-B171842
Sample ID: ICV Initial Calibration Verification Standard										09/01/11 10:14
Cyanide, Total		0.101	mg/L	0.0050	101	90	110			
Method: Kelada mod										Batch: B_56717
Sample ID: B11082925-003DMSD Sample Matrix Spike Duplicate										09/01/11 12:02
Cyanide, Total		0.0977	mg/L	0.0050	98	90	110	0.4		10
Sample ID: B11082925-003DMSD Sample Matrix Spike										09/01/11 11:59
Cyanide, Total		0.0973	mg/L	0.0050	97	90	110			
Sample ID: B11082785-006DMSD Sample Matrix Spike Duplicate										09/01/11 11:11
Cyanide, Total		0.100	mg/L	0.0050	100	90	110	2.0		20
Sample ID: B11082785-006DMSD Sample Matrix Spike										09/01/11 11:08
Cyanide, Total		0.102	mg/L	0.0050	102	90	110			
Sample ID: MBLK Method Blank										09/01/11 10:19
Cyanide, Total		ND	mg/L	0.002						
Sample ID: LFB Laboratory Fortified Blank										09/01/11 10:17
Cyanide, Total		0.0994	mg/L	0.0050	99	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/09/11
Work Order: H11080466

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										
Sample ID: CCV082911A										
53 Continuing Calibration Verification Standard										
Analytical Run: R73958										
08/29/11 15:52										
Acetone		58.0	ug/L	20	116	70	130			
Acrylonitrile		52.8	ug/L	20	106	70	130			
Benzene		5.72	ug/L	1.0	114	70	130			
Bromochloromethane		5.12	ug/L	1.0	102	70	130			
Bromodichloromethane		5.20	ug/L	1.0	104	70	130			
Bromoform		5.68	ug/L	1.0	114	70	130			
Bromomethane		4.84	ug/L	1.0	97	70	130			
Carbon disulfide		5.36	ug/L	1.0	107	70	130			
Carbon tetrachloride		5.36	ug/L	1.0	107	70	130			
Chlorobenzene		5.24	ug/L	1.0	105	70	130			
Chlorodibromomethane		5.24	ug/L	1.0	105	70	130			
Chloroethane		4.96	ug/L	1.0	99	70	130			
Chloroform		5.16	ug/L	1.0	103	80	120			
Chloromethane		5.80	ug/L	1.0	116	70	130			
1,2-Dibromo-3-chloropropane		5.04	ug/L	1.0	101	70	130			
1,2-Dibromoethane		4.92	ug/L	1.0	98	70	130			
Dibromomethane		4.96	ug/L	1.0	99	70	130			
1,2-Dichlorobenzene		5.04	ug/L	1.0	101	70	130			
1,4-Dichlorobenzene		5.04	ug/L	1.0	101	70	130			
Dichlorodifluoromethane		5.60	ug/L	1.0	112	70	130			
1,1-Dichloroethane		5.52	ug/L	1.0	110	70	130			
1,2-Dichloroethane		6.20	ug/L	1.0	124	70	130			
1,1-Dichloroethene		5.36	ug/L	1.0	107	80	120			
cis-1,2-Dichloroethene		5.56	ug/L	1.0	111	70	130			
trans-1,2-Dichloroethene		5.36	ug/L	1.0	107	70	130			
1,2-Dichloropropane		5.76	ug/L	1.0	115	80	120			
cis-1,3-Dichloropropene		5.48	ug/L	1.0	110	70	130			
trans-1,3-Dichloropropene		5.52	ug/L	1.0	110	70	130			
Ethylbenzene		5.40	ug/L	1.0	108	80	120			
2-Hexanone		54.8	ug/L	20	110	70	130			
Iodomethane		5.36	ug/L	1.0	107	70	130			
Methyl ethyl ketone		54.4	ug/L	20	109	70	130			
Methyl isobutyl ketone		53.6	ug/L	20	107	70	130			
Methylene chloride		5.24	ug/L	1.0	105	70	130			
Styrene		5.28	ug/L	1.0	106	70	130			
1,1,1,2-Tetrachloroethane		5.04	ug/L	1.0	101	70	130			
1,1,2,2-Tetrachloroethane		5.36	ug/L	1.0	107	70	130			
Tetrachloroethene		5.32	ug/L	1.0	106	70	130			
Toluene		5.32	ug/L	1.0	106	80	120			
1,1,1-Trichloroethane		5.44	ug/L	1.0	109	70	130			
1,1,2-Trichloroethane		5.64	ug/L	1.0	113	70	130			
Trichloroethene		4.92	ug/L	1.0	98	70	130			
Trichlorofluoromethane		5.28	ug/L	1.0	106	70	130			
1,2,3-Trichloropropane		5.20	ug/L	1.0	104	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/09/11
Work Order: H11080466

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										
Sample ID: CCV082911A 53 Continuing Calibration Verification Standard										
Analytical Run: R73958										
08/29/11 15:52										
Vinyl acetate		5.56	ug/L	1.0	111	70	130			
Vinyl chloride		5.68	ug/L	1.0	114	80	120			
m+p-Xylenes		10.6	ug/L	1.0	106	70	130			
o-Xylene		5.24	ug/L	1.0	105	70	130			
Xylenes, Total		15.9	ug/L	1.0	106	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	119	70	130			
Surr: Dibromofluoromethane				1.0	100	70	130			
Surr: p-Bromofluorobenzene				1.0	101	70	130			
Surr: Toluene-d8				1.0	97	70	130			

Method: SW8260B										
Batch: R73958										
Sample ID: MB082911A 53 Method Blank										
Run: 1SATURN_110829A										
08/29/11 18:25										
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	5.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/09/11
Work Order: H11080466

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R73958
Sample ID: MB082911A	53	Method Blank				Run: 1SATURN_110829A				08/29/11 18:25
Methyl isobutyl ketone		ND	ug/L		20					
Methylene chloride		ND	ug/L		0.50					
Styrene		ND	ug/L		0.50					
1,1,1,2-Tetrachloroethane		ND	ug/L		0.50					
1,1,2,2-Tetrachloroethane		ND	ug/L		0.50					
Tetrachloroethene		ND	ug/L		0.50					
Toluene		ND	ug/L		0.50					
1,1,1-Trichloroethane		ND	ug/L		0.50					
1,1,2-Trichloroethane		ND	ug/L		0.50					
Trichloroethene		ND	ug/L		0.50					
Trichlorofluoromethane		ND	ug/L		0.50					
1,2,3-Trichloropropane		ND	ug/L		0.50					
Vinyl acetate		ND	ug/L		0.50					
Vinyl chloride		ND	ug/L		0.50					
m+p-Xylenes		ND	ug/L		0.50					
o-Xylene		ND	ug/L		0.50					
Xylenes, Total		ND	ug/L		0.50					
Surr: 1,2-Dichloroethane-d4				1.0	100	70	130			
Surr: Dibromofluoromethane				1.0	91	70	130			
Surr: p-Bromofluorobenzene				1.0	97	70	130			
Surr: Toluene-d8				1.0	94	70	130			
Sample ID: H11080466-001BMS	53	Sample Matrix Spike				Run: 1SATURN_110829A				08/29/11 19:27
Acetone		107	ug/L	40	107	70	130			
Acrylonitrile		106	ug/L	40	106	70	130			
Benzene		10.1	ug/L	1.0	101	70	130			
Bromochloromethane		9.12	ug/L	1.0	91	70	130			
Bromodichloromethane		9.44	ug/L	1.0	94	70	130			
Bromoform		9.60	ug/L	1.0	96	70	130			
Bromomethane		8.32	ug/L	1.0	83	70	130			
Carbon disulfide		11.3	ug/L	1.0	113	70	130			
Carbon tetrachloride		10.4	ug/L	1.0	104	70	130			
Chlorobenzene		9.28	ug/L	1.0	93	70	130			
Chlorodibromomethane		9.44	ug/L	1.0	94	70	130			
Chloroethane		8.40	ug/L	1.0	84	70	130			
Chloroform		9.76	ug/L	1.0	98	70	130			
Chloromethane		10.2	ug/L	1.0	102	70	130			
1,2-Dibromo-3-chloropropane		9.28	ug/L	1.0	93	70	130			
1,2-Dibromoethane		9.12	ug/L	1.0	91	70	130			
Dibromomethane		9.60	ug/L	1.0	96	70	130			
1,2-Dichlorobenzene		9.28	ug/L	1.0	93	70	130			
1,4-Dichlorobenzene		8.72	ug/L	1.0	87	70	130			
Dichlorodifluoromethane		9.44	ug/L	1.0	94	70	130			
1,1-Dichloroethane		9.44	ug/L	1.0	94	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/09/11
Work Order: H11080466

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R73958
Sample ID: H11080466-001BMS	53	Sample Matrix Spike		Run: 1SATURN_110829A				08/29/11 19:27		
1,2-Dichloroethane		11.2	ug/L	1.0	112	70	130			
1,1-Dichloroethane		8.96	ug/L	1.0	90	70	130			
cis-1,2-Dichloroethene		10.2	ug/L	1.0	102	70	130			
trans-1,2-Dichloroethene		9.44	ug/L	1.0	94	70	130			
1,2-Dichloropropane		9.92	ug/L	1.0	99	70	130			
cis-1,3-Dichloropropene		9.84	ug/L	1.0	98	70	130			
trans-1,3-Dichloropropene		9.84	ug/L	1.0	98	70	130			
Ethylbenzene		9.52	ug/L	1.0	95	70	130			
2-Hexanone		96.8	ug/L	40	97	70	130			
Iodomethane		8.56	ug/L	1.0	86	70	130			
Methyl ethyl ketone		96.8	ug/L	20	97	70	130			
Methyl isobutyl ketone		96.0	ug/L	40	96	70	130			
Methylene chloride		8.88	ug/L	1.0	89	70	130			
Styrene		9.36	ug/L	1.0	94	70	130			
1,1,1,2-Tetrachloroethane		9.28	ug/L	1.0	93	70	130			
1,1,2,2-Tetrachloroethane		10.1	ug/L	1.0	101	70	130			
Tetrachloroethene		9.28	ug/L	1.0	93	70	130			
Toluene		9.52	ug/L	1.0	95	70	130			
1,1,1-Trichloroethane		9.36	ug/L	1.0	94	70	130			
1,1,2-Trichloroethane		10.2	ug/L	1.0	102	70	130			
Trichloroethene		9.04	ug/L	1.0	90	70	130			
Trichlorofluoromethane		9.60	ug/L	1.0	96	70	130			
1,2,3-Trichloropropane		9.28	ug/L	1.0	93	70	130			
Vinyl acetate		10.2	ug/L	1.0	102	70	130			
Vinyl chloride		9.60	ug/L	1.0	96	70	130			
m+p-Xylenes		19.3	ug/L	1.0	96	70	130			
o-Xylene		9.04	ug/L	1.0	90	70	130			
Xylenes, Total		28.3	ug/L	1.0	94	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	117	70	130			
Surr: Dibromofluoromethane				2.0	108	70	130			
Surr: p-Bromofluorobenzene				2.0	98	70	130			
Surr: Toluene-d8				2.0	93	70	130			
Sample ID: H11080466-001BMSD	53	Sample Matrix Spike Duplicate		Run: 1SATURN_110829A				08/29/11 19:57		
Acetone		114	ug/L	40	114	70	130	5.8		20
Acrylonitrile		111	ug/L	40	111	70	130	5.2		20
Benzene		10.6	ug/L	1.0	106	70	130	5.4		20
Bromochloromethane		9.28	ug/L	1.0	93	70	130	1.7		20
Bromodichloromethane		9.92	ug/L	1.0	99	70	130	5.0		20
Bromoform		10.5	ug/L	1.0	105	70	130	8.8		20
Bromomethane		9.12	ug/L	1.0	91	70	130	9.2		20
Carbon disulfide		12.7	ug/L	1.0	127	70	130	12		20
Carbon tetrachloride		10.0	ug/L	1.0	100	70	130	3.9		20
Chlorobenzene		9.76	ug/L	1.0	98	70	130	5.0		20

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

 Client: Hydrometrics Inc
 Project: 1273 City of Helena

 Report Date: 09/09/11
 Work Order: H11080466

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R73958
Sample ID: H11080466-001BMSD	53	Sample Matrix Spike Duplicate				Run: 1SATURN_110829A				08/29/11 19:57
Chlorodibromomethane		9.76	ug/L	1.0	98	70	130	3.3		20
Chloroethane		9.84	ug/L	1.0	98	70	130	16		20
Chloroform		9.76	ug/L	1.0	98	70	130	0.0		20
Chloromethane		11.8	ug/L	1.0	118	70	130	14		20
1,2-Dibromo-3-chloropropane		10.0	ug/L	1.0	100	70	130	7.5		20
1,2-Dibromoethane		8.96	ug/L	1.0	90	70	130	1.8		20
Dibromomethane		9.52	ug/L	1.0	95	70	130	0.8		20
1,2-Dichlorobenzene		9.76	ug/L	1.0	98	70	130	5.0		20
1,4-Dichlorobenzene		9.20	ug/L	1.0	92	70	130	5.4		20
Dichlorodifluoromethane		10.5	ug/L	1.0	105	70	130	10		20
1,1-Dichloroethane		10.3	ug/L	1.0	103	70	130	8.9		20
1,2-Dichloroethane		11.8	ug/L	1.0	118	70	130	5.6		20
1,1-Dichloroethene		9.12	ug/L	1.0	91	70	130	1.8		20
cis-1,2-Dichloroethene		10.6	ug/L	1.0	106	70	130	4.6		20
trans-1,2-Dichloroethene		9.68	ug/L	1.0	97	70	130	2.5		20
1,2-Dichloropropane		9.92	ug/L	1.0	99	70	130	0.0		20
cis-1,3-Dichloropropene		10.0	ug/L	1.0	100	70	130	1.6		20
trans-1,3-Dichloropropene		9.84	ug/L	1.0	98	70	130	0.0		20
Ethylbenzene		10.1	ug/L	1.0	101	70	130	5.7		20
2-Hexanone		96.8	ug/L	40	97	70	130	0.0		20
Iodomethane		9.20	ug/L	1.0	92	70	130	7.2		20
Methyl ethyl ketone		102	ug/L	20	102	70	130	4.8		20
Methyl isobutyl ketone		98.4	ug/L	40	98	70	130	2.5		20
Methylene chloride		9.20	ug/L	1.0	92	70	130	3.5		20
Styrene		9.68	ug/L	1.0	97	70	130	3.4		20
1,1,1,2-Tetrachloroethane		9.92	ug/L	1.0	99	70	130	6.7		20
1,1,2,2-Tetrachloroethane		10.2	ug/L	1.0	102	70	130	0.8		20
Tetrachloroethene		9.44	ug/L	1.0	94	70	130	1.7		20
Toluene		9.76	ug/L	1.0	98	70	130	2.5		20
1,1,1-Trichloroethane		10.0	ug/L	1.0	100	70	130	6.6		20
1,1,2-Trichloroethane		11.0	ug/L	1.0	110	70	130	6.8		20
Trichloroethene		9.68	ug/L	1.0	97	70	130	6.8		20
Trichlorofluoromethane		10.2	ug/L	1.0	102	70	130	6.5		20
1,2,3-Trichloropropane		9.28	ug/L	1.0	93	70	130	0.0		20
Vinyl acetate		10.4	ug/L	1.0	104	70	130	2.3		20
Vinyl chloride		10.8	ug/L	1.0	108	70	130	12		20
m+p-Xylenes		19.0	ug/L	1.0	95	70	130	1.3		20
o-Xylene		10.1	ug/L	1.0	101	70	130	11		20
Xylenes, Total		29.1	ug/L	1.0	97	70	130	2.8		20
Surr: 1,2-Dichloroethane-d4				2.0	120	70	130			
Surr: Dibromofluoromethane				2.0	101	70	130			
Surr: p-Bromofluorobenzene				2.0	100	70	130			
Surr: Toluene-d8				2.0	92	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



H11080466

Hydrometrics Inc

Login completed by: Tracy L. Lorash

Date Received: 8/25/2011

Reviewed by: BL2000\ablackburn

Received by: elm

Reviewed Date: 8/30/2011

 Carrier Hand Del
 name:

 Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

 Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒

 Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

 Chain of custody present? Yes ☒ No ☐

 Chain of custody signed when relinquished and received? Yes ☒ No ☐

 Chain of custody agrees with sample labels? Yes ☒ No ☐

 Samples in proper container/bottle? Yes ☒ No ☐

 Sample containers intact? Yes ☒ No ☐

 Sufficient sample volume for indicated test? Yes ☒ No ☐

 All samples received within holding time? Yes ☒ No ☐

Container/Temp Blank temperature: 10.6°C From Field

 Water - VOA vials have zero headspace? Yes ☒ No ☐ No VOA vials submitted ☐

 Water - pH acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Contact and Corrective Action Comments:

None



3020 Bozeman Avenue • Helena, Montana 59601 • (406) 443-4150

[illegible]

Return results & electronic copy to: -
QA/QC Dept. at address at top of page

Temp 10.6 HAN

Split Samples:
☒ Accepted ☐ Declined

Signature _____

Sprinkler CHHL-9-27-11 11:30 3/UF/HOI/VOG
 1109-
 100

Weather:

clear, sunny, 65°, calm

GWs:

Site	Time	Hr	Flow	Totals
HL-99-1	11:05	3077.3	12.88	1-239569x10 2-239563x10
HL-99-2	11:10	2981.8	23.36 ⁴⁴	1-189923x10 2-189893x10
HL-99-3	11:15	3077.2	28.33	1-553728x10 2-553719x10

John T. Brown

Winterization & Shutdown of GATES:

Oct. 13, 2011

Site	Time	Hr	Flow	Totals
HL-99-1	1515	3458.3	12.94	269121 x10 269115 x10
HL-99-2	1510	3362.8	23.33	243435 x10 243395 x10
HL-99-3	1505	3458.1	27.72	618425 x10 618415 x10

Shut off all pumps and locked
out electrical boxes.

Tom Brown

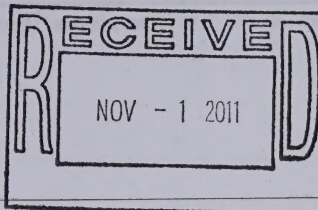
ANALYTICAL SUMMARY REPORT

October 29, 2011

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H11090464

Project Name: 1273 City of Helena Landfill



Energy Laboratories Inc Helena MT received the following 1 sample for Hydrometrics Inc on 9/27/2011 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H11090464-001	CHHL-1109-100 Sprinkler	09/27/11 11:30	09/27/11	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

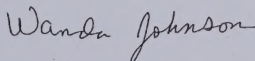
The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise reported.

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:


Login Supervisor

Digitally signed by
Wanda Johnson
Date: 2011.10.31 12:44:33 -06:00

Report Date: 10/29/11

CASE NARRATIVE

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill
Lab ID: H11090464-001
Client Sample ID CHHL-1109-100 Sprinkler

Report Date: 10/29/11
Collection Date: 09/27/11 11:30
Date Received: 09/27/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/07/11 15:15 / eli-b1
Acrylonitrile	ND	ug/L		20		SW8260B	10/07/11 15:15 / eli-b1
Benzene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Bromochloromethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Bromodichloromethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Bromoform	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Bromomethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Carbon disulfide	ND	ug/L		1.0		SW8260B	10/07/11 15:15 / eli-b1
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Chlorobenzene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Chloroethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Chloroform	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Chloromethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,2-Dibromo-3-chloropropane	ND	ug/L		1.0		SW8260B	10/07/11 15:15 / eli-b1
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Dibromomethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
trans-1,4-Dichloro-2-butene	ND	ug/L		1.0		SW8260B	10/07/11 15:15 / eli-b1
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Ethylbenzene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
2-Hexanone	ND	ug/L		20		SW8260B	10/07/11 15:15 / eli-b1
Iodomethane	ND	ug/L		1.0		SW8260B	10/07/11 15:15 / eli-b1
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/07/11 15:15 / eli-b1
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/07/11 15:15 / eli-b1
Methylene chloride	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Styrene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Tetrachloroethene	0.22	ug/L	J	0.50		SW8260B	10/07/11 15:15 / eli-b1
Toluene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Trichloroethene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1

Report RL - Analyte reporting limit.

Definitions: QCL - Quality control limit.

J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Prepared by Helena, MT Branch

Report Date: 10/29/11
Collection Date: 09/27/11 11:30
DateReceived: 09/27/11
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Vinyl acetate	ND	ug/L		1.0		SW8260B	10/07/11 15:15 / eli-b1
Vinyl chloride	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
m+p-Xylenes	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
o-Xylene	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Xylenes, Total	ND	ug/L		0.50		SW8260B	10/07/11 15:15 / eli-b1
Surr: 1,2-Dichloroethane-d4	93.0	%REC		70-130		SW8260B	10/07/11 15:15 / eli-b1
Surr: Dibromofluoromethane	98.0	%REC		77-126		SW8260B	10/07/11 15:15 / eli-b1
Surr: p-Bromofluorobenzene	99.0	%REC		76-127		SW8260B	10/07/11 15:15 / eli-b1
Surr: Toluene-d8	110	%REC		79-122		SW8260B	10/07/11 15:15 / eli-b1

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Project: 1273 City of Helena Landfill

Report Date: 10/29/11

Work Order: H11090464

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: B_R173786
Sample ID: ccv100711										10/07/11 09:17
54 Continuing Calibration Verification Standard										
trans-1,4-Dichloro-2-butene	4.28	ug/L	1.0	86	70	130				
Acetone	42.4	ug/L	20	85	70	130				
Acrylonitrile	49.2	ug/L	20	98	70	130				
Benzene	5.12	ug/L	1.0	102	70	130				
Bromochloromethane	4.60	ug/L	1.0	92	70	130				
Bromodichloromethane	4.84	ug/L	1.0	97	70	130				
Bromoform	4.56	ug/L	1.0	91	70	130				
Bromomethane	6.28	ug/L	1.0	126	70	130				
Carbon disulfide	4.48	ug/L	1.0	90	70	130				
Carbon tetrachloride	4.52	ug/L	1.0	90	70	130				
Chlorobenzene	5.24	ug/L	1.0	105	70	130				
Chlorodibromomethane	4.60	ug/L	1.0	92	70	130				
Chloroethane	5.64	ug/L	1.0	113	70	130				
Chloroform	4.60	ug/L	1.0	92	80	120				
Chloromethane	5.28	ug/L	1.0	106	70	130				
1,2-Dibromo-3-chloropropane	3.82	ug/L	1.0	76	70	130				
1,2-Dibromoethane	5.04	ug/L	1.0	101	70	130				
Dibromomethane	5.16	ug/L	1.0	103	70	130				
1,2-Dichlorobenzene	5.12	ug/L	1.0	102	70	130				
1,4-Dichlorobenzene	5.16	ug/L	1.0	103	70	130				
Dichlorodifluoromethane	4.72	ug/L	1.0	94	70	130				
1,1-Dichloroethane	4.84	ug/L	1.0	97	70	130				
1,2-Dichloroethane	4.60	ug/L	1.0	92	70	130				
1,1-Dichloroethene	4.96	ug/L	1.0	99	80	120				
cis-1,2-Dichloroethene	5.08	ug/L	1.0	102	70	130				
trans-1,2-Dichloroethene	5.28	ug/L	1.0	106	70	130				
1,2-Dichloropropane	5.44	ug/L	1.0	109	80	120				
cis-1,3-Dichloropropene	5.00	ug/L	1.0	100	70	130				
trans-1,3-Dichloropropene	4.92	ug/L	1.0	98	70	130				
Ethylbenzene	5.44	ug/L	1.0	109	80	120				
2-Hexanone	49.6	ug/L	20	99	70	130				
Iodomethane	4.68	ug/L	1.0	94	70	130				
Methyl ethyl ketone	46.4	ug/L	20	93	70	130				
Methyl isobutyl ketone	48.8	ug/L	20	98	70	130				
Methylene chloride	4.60	ug/L	1.0	92	70	130				
Styrene	5.44	ug/L	1.0	109	70	130				
1,1,1,2-Tetrachloroethane	4.80	ug/L	1.0	96	70	130				
1,1,2,2-Tetrachloroethane	4.84	ug/L	1.0	97	70	130				
Tetrachloroethene	5.48	ug/L	1.0	110	70	130				
Toluene	5.44	ug/L	1.0	109	80	120				
1,1,1-Trichloroethane	4.60	ug/L	1.0	92	70	130				
1,1,2-Trichloroethane	5.20	ug/L	1.0	104	70	130				
Trichloroethene	5.32	ug/L	1.0	106	70	130				
Trichlorofluoromethane	4.96	ug/L	1.0	99	70	130				

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill

Report Date: 10/29/11
Work Order: H11090464

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: B_R173786
Sample ID: ccv100711	54 Continuing Calibration Verification Standard									10/07/11 09:17
1,2,3-Trichloropropane		4.48	ug/L	1.0	90	70	130			
Vinyl acetate		5.76	ug/L	1.0	115	70	130			
Vinyl chloride		5.32	ug/L	1.0	106	80	120			
m+p-Xylenes		10.7	ug/L	1.0	107	70	130			
o-Xylene		5.36	ug/L	1.0	107	70	130			
Xylenes, Total		16.0	ug/L	1.0		0	0			
Surr: 1,2-Dichloroethane-d4				1.0	90	60	136			
Surr: Dibromofluoromethane				1.0	98	70	132			
Surr: p-Bromofluorobenzene				1.0	98	78	160			
Surr: Toluene-d8				1.0	111	75	138			

Method: SW8260B										Batch: B_R173786
Sample ID: blk100711	53 Method Blank									Run: SUB-B173786
										10/07/11 11:02
Acetone		ND	ug/L	10						
Acrylonitrile		ND	ug/L	10						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						
1,4-Dichlorobenzene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	10						
Iodomethane		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 10/29/11

Project: 1273 City of Helena Landfill

Work Order: H11090464

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R173786
Sample ID: blk100711	53	Method Blank					Run: SUB-B173786			10/07/11 11:02
Methyl ethyl ketone		ND	ug/L	10						
Methyl isobutyl ketone		ND	ug/L	10						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				1.0	92	70	130			
Surr: Dibromofluoromethane				1.0	97	77	126			
Surr: p-Bromofluorobenzene				1.0	98	76	127			
Surr: Toluene-d8				1.0	113	79	122			
Sample ID: lcs100711	52	Laboratory Control Sample					Run: SUB-B173786			10/07/11 10:06
Acetone		40.4	ug/L	20	81	62	130			
Acrylonitrile		52.0	ug/L	20	104	60	130			
Benzene		5.08	ug/L	1.0	102	71	133			
Bromochloromethane		4.56	ug/L	1.0	91	68	131			
Bromodichloromethane		4.80	ug/L	1.0	96	67	138			
Bromoform		4.40	ug/L	1.0	88	64	136			
Bromomethane		6.64	ug/L	1.0	133	60	138			
Carbon disulfide		4.52	ug/L	1.0	90	46	145			
Carbon tetrachloride		4.40	ug/L	1.0	88	61	144			
Chlorobenzene		5.24	ug/L	1.0	105	78	136			
Chlorodibromomethane		4.72	ug/L	1.0	94	72	136			
Chloroethane		5.72	ug/L	1.0	114	64	136			
Chloroform		4.56	ug/L	1.0	91	69	133			
Chloromethane		5.12	ug/L	1.0	102	63	149			
1,2-Dibromo-3-chloropropane		4.08	ug/L	1.0	82	63	125			
1,2-Dibromoethane		5.04	ug/L	1.0	101	75	131			
Dibromomethane		5.32	ug/L	1.0	106	72	133			
1,2-Dichlorobenzene		4.92	ug/L	1.0	98	78	129			
1,4-Dichlorobenzene		5.08	ug/L	1.0	102	78	131			
Dichlorodifluoromethane		5.04	ug/L	1.0	101	55	141			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill

Report Date: 10/29/11
Work Order: H11090464

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R173786
Sample ID: Ics100711	52	Laboratory Control Sample				Run: SUB-B173786				10/07/11 10:06
1,1-Dichloroethane		4.76	ug/L	1.0	95	72	130			
1,2-Dichloroethane		4.56	ug/L	1.0	91	57	146			
1,1-Dichloroethene		5.00	ug/L	1.0	100	66	142			
cis-1,2-Dichloroethene		4.88	ug/L	1.0	98	74	133			
trans-1,2-Dichloroethene		5.08	ug/L	1.0	102	76	138			
1,2-Dichloropropane		5.20	ug/L	1.0	104	72	135			
cis-1,3-Dichloropropene		4.96	ug/L	1.0	99	75	132			
trans-1,3-Dichloropropene		5.16	ug/L	1.0	103	77	145			
Ethylbenzene		5.28	ug/L	1.0	106	78	131			
2-Hexanone		49.2	ug/L	20	98	72	131			
Iodomethane		6.08	ug/L	1.0	122	66	132			
Methyl ethyl ketone		44.8	ug/L	20	90	55	145			
Methyl isobutyl ketone		48.8	ug/L	20	98	73	129			
Methylene chloride		4.60	ug/L	1.0	92	73	126			
Styrene		5.40	ug/L	1.0	108	76	134			
1,1,1,2-Tetrachloroethane		4.76	ug/L	1.0	95	75	135			
1,1,2,2-Tetrachloroethane		4.56	ug/L	1.0	91	72	132			
Tetrachloroethene		5.36	ug/L	1.0	107	78	137			
Toluene		5.44	ug/L	1.0	109	78	134			
1,1,1-Trichloroethane		4.44	ug/L	1.0	89	64	141			
1,1,2-Trichloroethane		5.08	ug/L	1.0	102	72	133			
Trichloroethene		5.12	ug/L	1.0	102	75	138			
Trichlorofluoromethane		4.84	ug/L	1.0	97	58	139			
1,2,3-Trichloropropane		4.52	ug/L	1.0	90	67	133			
Vinyl acetate		5.00	ug/L	1.0	100	31	124			
Vinyl chloride		5.12	ug/L	1.0	102	66	140			
m+p-Xylenes		10.5	ug/L	1.0	105	78	133			
o-Xylene		5.32	ug/L	1.0	106	79	136			
Surr: 1,2-Dichloroethane-d4				1.0	92	70	130			
Surr: Dibromofluoromethane				1.0	97	77	126			
Surr: p-Bromofluorobenzene				1.0	98	76	127			
Surr: Toluene-d8				1.0	112	79	122			
Sample ID: H11090503-002B	52	Sample Matrix Spike Duplicate				Run: SUB-B174115				10/10/11 20:15
Acetone		72.4	ug/L	20	72	62	130	0.1	20	
Acrylonitrile		95.2	ug/L	20	95	60	130	10	20	
Benzene		9.52	ug/L	1.0	94	71	133	1.7	20	
Bromochloromethane		8.80	ug/L	1.0	88	68	131	3.7	20	
Bromodichloromethane		9.28	ug/L	1.0	93	67	138	5.3	20	
Bromoform		8.56	ug/L	1.0	86	64	136	4.8	20	
Bromomethane		8.72	ug/L	1.0	87	60	138	15	20	
Carbon disulfide		8.64	ug/L	1.0	86	46	145	2.8	20	
Carbon tetrachloride		7.58	ug/L	1.0	76	61	144	3.2	20	
Chlorobenzene		9.84	ug/L	1.0	98	78	136	1.6	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Report Date: 10/29/11

Project: 1273 City of Helena Landfill

Work Order: H11090464

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R173786
Sample ID: H11090503-002B	52	Sample Matrix Spike Duplicate			Run: SUB-B174115			10/10/11 20:15		
Chlorodibromomethane		9.04	ug/L	1.0	90	72	136	3.6		20
Chloroethane		10.6	ug/L	1.0	106	64	136	3.8		20
Chloroform		8.56	ug/L	1.0	86	69	133	2.8		20
Chloromethane		9.68	ug/L	1.0	97	63	149	9.5		20
1,2-Dibromo-3-chloropropane		8.16	ug/L	2.0	82	63	125	6.4		20
1,2-Dibromoethane		10.2	ug/L	1.0	102	75	131	3.2		20
Dibromomethane		10.6	ug/L	1.0	106	72	133	8.7		20
1,2-Dichlorobenzene		9.84	ug/L	1.0	98	78	129	4.1		20
1,4-Dichlorobenzene		9.76	ug/L	1.0	98	78	131	0.8		20
Dichlorodifluoromethane		18.2	ug/L	1.0	60	55	141	4.5		20
1,1-Dichloroethane		9.28	ug/L	1.0	93	72	130	0.0		20
1,2-Dichloroethane		8.88	ug/L	1.0	89	57	146	4.6		20
1,1-Dichloroethene		9.12	ug/L	1.0	91	66	142	1.7		20
cis-1,2-Dichloroethene		9.68	ug/L	1.0	97	74	133	2.5		20
trans-1,2-Dichloroethene		9.60	ug/L	1.0	96	76	138	1.7		20
1,2-Dichloropropane		10.6	ug/L	1.0	106	72	135	3.1		20
cis-1,3-Dichloropropene		9.44	ug/L	1.0	94	75	132	0.9		20
trans-1,3-Dichloropropene		10.0	ug/L	1.0	100	77	145	4.9		20
Ethylbenzene		10.2	ug/L	1.0	101	78	131	0.0		20
2-Hexanone		106	ug/L	20	106	72	131	7.0		20
Iodomethane		11.4	ug/L	2.0	114	66	132	5.8		20
Methyl ethyl ketone		92.8	ug/L	20	93	55	145	6.2		20
Methyl isobutyl ketone		108	ug/L	20	108	73	129	9.3		20
Methylene chloride		8.96	ug/L	1.0	90	73	126	1.8		20
Styrene		10.2	ug/L	1.0	102	76	134	0.0		20
1,1,1,2-Tetrachloroethane		8.96	ug/L	1.0	90	75	135	1.8		20
1,1,2,2-Tetrachloroethane		9.92	ug/L	1.0	99	72	132	3.3		20
Tetrachloroethene		9.36	ug/L	1.0	94	78	137	1.7		20
Toluene		10.6	ug/L	1.0	104	78	134	0.0		20
1,1,1-Trichloroethane		8.08	ug/L	1.0	81	64	141	0.0		20
1,1,2-Trichloroethane		10.3	ug/L	1.0	103	72	133	6.4		20
Trichloroethene		9.76	ug/L	1.0	98	75	138	0.0		20
Trichlorofluoromethane		8.32	ug/L	1.0	83	58	139	4.7		20
1,2,3-Trichloropropane		9.52	ug/L	1.0	95	67	133	3.4		20
Vinyl acetate		10.6	ug/L	2.0	106	31	124	10		20
Vinyl chloride		9.76	ug/L	1.0	98	66	140	6.8		20
m+p-Xylenes		20.2	ug/L	1.0	100	78	133	0.8		20
o-Xylene		10.4	ug/L	1.0	102	79	136	1.5		20
Surr: 1,2-Dichloroethane-d4				2.0	94	70	130			
Surr: Dibromofluoromethane				2.0	96	77	126			
Surr: p-Bromofluorobenzene				2.0	103	76	127			
Surr: Toluene-d8				2.0	111	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc

Project: 1273 City of Helena Landfill

Report Date: 10/29/11

Work Order: H11090464

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B		Batch: B_R173786								
Sample ID: H11090503-002B	52	Sample Matrix Spike		Run: SUB-B174115				10/10/11 19:47		
Acetone		72.5	ug/L	20	72	62	130			
Acrylonitrile		106	ug/L	20	106	60	130			
Benzene		9.36	ug/L	1.0	92	71	133			
Bromochloromethane		8.48	ug/L	1.0	85	68	131			
Bromodichloromethane		8.80	ug/L	1.0	88	67	138			
Bromoform		8.16	ug/L	1.0	82	64	136			
Bromomethane		7.54	ug/L	1.0	75	60	138			
Carbon disulfide		8.40	ug/L	1.0	84	46	145			
Carbon tetrachloride		7.83	ug/L	1.0	78	61	144			
Chlorobenzene		9.68	ug/L	1.0	97	78	136			
Chlorodibromomethane		8.72	ug/L	1.0	87	72	136			
Chloroethane		10.2	ug/L	1.0	102	64	136			
Chloroform		8.32	ug/L	1.0	83	69	133			
Chloromethane		8.80	ug/L	1.0	88	63	149			
1,2-Dibromo-3-chloropropane		7.66	ug/L	2.0	77	63	125			
1,2-Dibromoethane		9.92	ug/L	1.0	99	75	131			
Dibromomethane		9.68	ug/L	1.0	97	72	133			
1,2-Dichlorobenzene		9.44	ug/L	1.0	94	78	129			
1,4-Dichlorobenzene		9.68	ug/L	1.0	97	78	131			
Dichlorodifluoromethane		17.4	ug/L	1.0	52	55	141			S
1,1-Dichloroethane		9.28	ug/L	1.0	93	72	130			
1,2-Dichloroethane		8.48	ug/L	1.0	85	57	146			
1,1-Dichloroethene		9.28	ug/L	1.0	93	66	142			
cis-1,2-Dichloroethene		9.44	ug/L	1.0	94	74	133			
trans-1,2-Dichloroethene		9.76	ug/L	1.0	98	76	138			
1,2-Dichloropropane		10.2	ug/L	1.0	102	72	135			
cis-1,3-Dichloropropene		9.36	ug/L	1.0	94	75	132			
trans-1,3-Dichloropropene		9.52	ug/L	1.0	95	77	145			
Ethylbenzene		10.2	ug/L	1.0	101	78	131			
2-Hexanone		99.2	ug/L	20	99	72	131			
Iodomethane		10.7	ug/L	2.0	107	66	132			
Methyl ethyl ketone		87.2	ug/L	20	87	55	145			
Methyl isobutyl ketone		98.4	ug/L	20	98	73	129			
Methylene chloride		8.80	ug/L	1.0	88	73	126			
Styrene		10.2	ug/L	1.0	102	76	134			
1,1,1,2-Tetrachloroethane		8.80	ug/L	1.0	88	75	135			
1,1,2,2-Tetrachloroethane		9.60	ug/L	1.0	96	72	132			
Tetrachloroethene		9.52	ug/L	1.0	95	78	137			
Toluene		10.6	ug/L	1.0	104	78	134			
1,1,1-Trichloroethane		8.08	ug/L	1.0	81	64	141			
1,1,2-Trichloroethane		9.68	ug/L	1.0	97	72	133			
Trichloroethene		9.76	ug/L	1.0	98	75	138			
Trichlorofluoromethane		7.94	ug/L	1.0	79	58	139			
1,2,3-Trichloropropane		9.20	ug/L	1.0	92	67	133			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



QA/QC Summary Report

Prepared by Helena, MT Branch

Client: Hydrometrics Inc
Project: 1273 City of Helena Landfill

Report Date: 10/29/11
Work Order: H11090464

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: B_R173786
Sample ID: H11090503-002B		52 Sample Matrix Spike		Run: SUB-B174115		10/10/11 19:47				
Vinyl acetate		9.60	ug/L	2.0	96	31	124			
Vinyl chloride		9.12	ug/L	1.0	91	66	140			
m+p-Xylenes		20.3	ug/L	1.0	100	78	133			
o-Xylene		10.6	ug/L	1.0	103	79	136			
Surr: 1,2-Dichloroethane-d4				2.0	94	70	130			
Surr: Dibromofluoromethane				2.0	95	77	126			
Surr: p-Bromofluorobenzene				2.0	101	76	127			
Surr: Toluene-d8				2.0	111	79	122			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



H11090464

Hydrometrics Inc

Login completed by: Tracy L. Lorash

Date Received: 9/27/2011

Reviewed by: BL2000\ablackburn

Received by: TLL

Reviewed Date: 9/28/2011

Carrier Hand Del
name:

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☒	No ☐	
Container/Temp Blank temperature:	3.0°C On Ice		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:

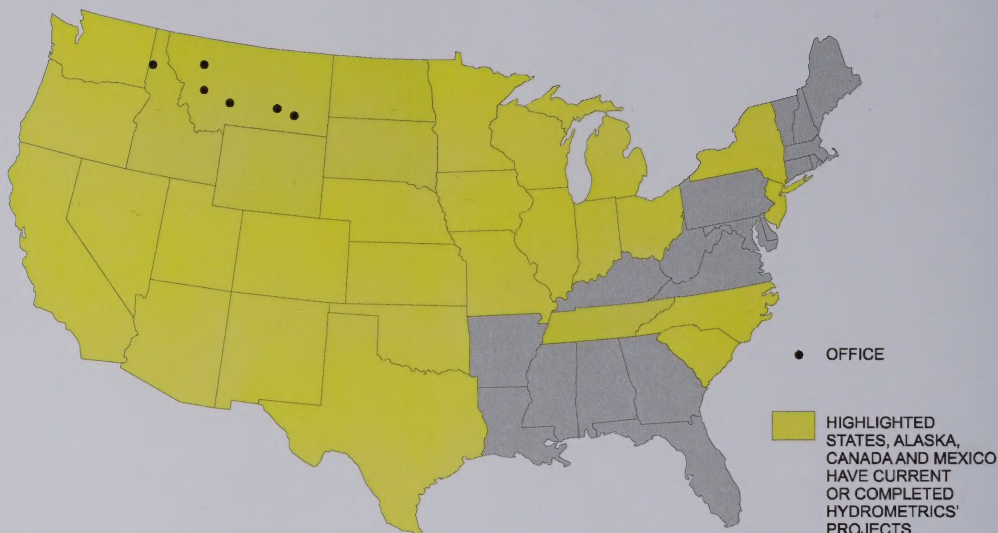
None

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